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ART. I.—*Histoire des Girondins.* Par M. A. DE LAMARTINE: Paris, 1847. 8 vols. 8vo.

PUBLIC expectation could not fail to be greatly raised, when it was announced that M. de Lamartine was employed in writing the history of some of the most remarkable men, by whom one of the most remarkable periods and parties of the French Revolution was most distinguished. Little doubt could exist that the labours of such a writer would produce a striking and attractive work. But there were some who expected that M. de Lamartine's history would still more interest, and possibly instruct his countrymen, by offering a view of the Revolution very different in its political bearing from that, in which it has been the tendency of recent writers to represent, and of the French public in general to regard it. Though an adherent of the existing dynasty and institutions, though in fact at present a member of a liberal opposition, yet M. de Lamartine's attachment to the Church of Rome and the romantic character of his writings, together with the personal associations which belong to religious and literary sympathies, have throughout the vicissitudes of politics enabled him to continue in friendly relations with the party most opposed to the Revolution, and its results. The Fauxbourg St. Germain regarded him as a man whose conclusions and votes were mischievous: but whose writings and speeches were calculated to serve their cause, by fostering a spirit opposed to the democratic tendencies of modern France. They trusted that, even if he did not ven-

ture openly to assail the principles of the Revolution, and defend the *ancien régime*, a sentimental and imaginative writer could not tell the tale of those times without exciting sympathy in behalf of those who had fallen victims to their devotion to the altar and the throne, and arousing indignation against the cause that was soiled by the irreligion and atrocities of the Commune and the Jacobins. They hoped that while the massacres of September, the various horrors of the Reign of Terror, and the enormities of Lyons and Nantes, would be pourtrayed with fearful distinctness, the poetical historian would depict in the most brilliant colours the chivalrous constancy of the aristocracy, would exert his tragic powers in describing the sufferings and courage of the Royal Family, and immortalise in glowing narrative the heroic deeds done in La Vendée.

The opposite party agreed in expecting very much the same results from the pencil of M. de Lamartine. Never were general anticipations more signally disappointed. The tale of the victims of the Revolution is told with pathetic splendour by M. de Lamartine: every incident of suffering, every act of courage, elicits his generous sympathy. But his heart is with the Revolution throughout all its phases. While he marks and condemns its crimes and excesses with strict justice, his master feelings are a deep conviction of its paramount necessity and rectitude, and a patriotic pride in its triumph over domestic as well as foreign foes. He has no regrets for the ancient institutions of France, but sees in their downfal the triumph of the first principles of justice and reason. His imagination, instead of lingering amid the ruins of monarchy and feudality, contemplates with evident predilection the visions of the republic. Far from branding the Revolution with a general character of irreligion, on account of the excesses of the mob or of some few crazy fanatics of infidelity, he is rather disposed to regard the whole movement as one of a religious nature, having its origin in a deep, dim, but sincere determination to realise the spirit of Christianity in the arrangements of society and the institutions of government. The opponents of the Revolution he judges with mild forbearance; but he still judges them, in order to condemn them as men who withstood the right. The very sympathy which he expresses and excites in behalf of the Royal Family by the minute description of their sufferings, their affection, and their patience, renders more damaging to the royal cause the stern impartiality with which he criticises their acts, delineates their characters, and denounces their misconduct, as the main cause of the calamities in which both themselves and their country became so fatally involved. The real

heroes of his story are the individuals who promoted the Revolution with the greatest vigour, and followed out its principles with the sternest determination to their most extreme consequences. Even the party whose fortunes he has made the nominal subject of his narrative are too pale a type of republican enthusiasm and energy to satisfy his daring fancy. From first to last, the principal personage of the drama is Robespierre. On him the reader's attention is gradually concentrated more and more, as on the living emblem of the Revolution, of its principle, of its energy, of its moral grandeur, and of the excesses by which that grandeur was chequered; and with his fall the narrative ends as with the cessation of all that could give an interest in its story.

The appearance of a work of a character and tendency so absolutely the reverse of all that had been anticipated from the author, while its literary merits surpassed even the most favourable expectations, could not fail to create an extraordinary sensation in France. No work that has appeared in our day seems to have created such a ferment in Paris. The Royalists, and all who, without being actually supporters of the ancient dynasty and order of things, are more or less opposed to the spirit of the Revolution, shrank at the deadly wound inflicted on their feelings and their cause by what they had deemed a friendly hand. The Christian poet seemed to carry away religion and sentiment from their ranks into those of their opponents. The adherents of the Revolution hailed with joy and gratitude the unexpected accession of a new and potent ally. Discountenanced by Conservative opinion, and denounced by his old friends of the Fauxbourg, M. de Lamartine has been rewarded by the general acknowledgments with which his countrymen have received his vindication of the national character, and his justification of the spirit which the Revolution has made the spirit of the French people.

Independently, however, of these adventitious causes of a momentary notoriety, the History of the Girondins is a work that possesses solid claims to a more durable and extensive reputation. We cannot receive it as a satisfactory history of the period of which it treats. In fact the author, though he has given it the name of a 'history,' is content that it should be classed in a humbler category. 'As for the title of this book,' he says in his preface, 'we have only adopted it for want of any other word to 'designate a narrative. This book has none of the pretensions 'of history, and must not assume its dignity. It is an inter-'mediate work between history and memoirs. Events occupy 'in it a subordinate place to men and ideas. It is full of per-

'sonal details. These details are the physiognomy of characters: 'it is through them that the latter impress themselves on the 'imagination. Great writers have already written the chronicles 'of this memorable epoch. Others will ere long write them. It 'will be doing us injustice to compare us with them. They have 'produced, or will produce, the history of an age: we have pro- 'duced nothing but a *study* of a group of men, and of some 'months of the Revolution.'

With this scheme of his work before him, M. de Lamartine has not thought it necessary to give a detailed record of all the events of the period. He assumes that his reader has already acquired this knowledge from other sources. Relying on this he has not, as he tells us, scrupled in some instances to heighten the effect by neglecting the exact order of time. It is much to be regretted, however, that such omissions and inversions are accompanied by more serious defects, which impair our confidence in the accuracy of the narrative, and consequently in the justice of the views based upon it. The intermediate position between history and memoirs which the author would assume for his work is one which, unfortunately, possesses the claims of neither, as an authority concerning matters of fact. Its statements are not given, as in memoirs, on the author's personal knowledge; nor are they drawn, as in a trustworthy history, from original accounts of a known and authentic character. Incidents, which give an entirely new aspect to some of the principal persons, and to some even of the most important events of the period, are stated on the authority of no published work, or accessible record (in which case the authenticity or value of the statement could have been tested), but simply on that of private documents, which the reader has no means of examining for himself, — of conversations with unnamed individuals, the trustworthiness as well as the effect of whose evidence we are obliged to take entirely on credit from our author. We have not the slightest distrust of M. de Lamartine's assurance that he has made a most scrupulous investigation into the statements from which his narrative has been prepared. 'Although,' he says, 'we have not encumbered the narrative with notes, with 'references, and with *pièces justificatives*, there is not one of our 'statements which is not authorised either by authentic memoirs, 'or by unpublished memoirs, or by autograph correspondence, 'which the families of the principal personages have been 'pleased to confide to us, or by oral and trustworthy informa- 'tion collected from the lips of the last survivors of this great 'epoch.' The consequence of this indisposition to encumber the story with the ordinary proofs of historical accuracy is, that when

we get beyond the most familiar incidents, we never know the value of a single statement that is made: for instance, whether it is derived from most intelligent and impartial witnesses, or from the most discredited and heated partisans; whether it is capable of being supported by a reference to some indisputable and acknowledged authority, or rests entirely on the private conversation or letter of some survivor of the Revolution, whose good faith or judgment it is possible that particular circum stances may have led M. de Lamartine to over-estimate. This is a fault peculiarly to be regretted in an author, whose poetical reputation lays him open to the imputation of not being much in the habit of investigating closely, or weighing accurately, the evidences of historical facts: and the very character of whose work suggests the suspicion that he may have been ready to take on insufficient evidence any striking statement that would heighten the effect of his narrative, or bear out the view which he has formed of the character of some remarkable individual. M. de Lamartine promises that, after a while, in case any of his statements should be assailed, he will support them by a mass of proof. We would impress on him that this is a duty, which, even without any call of self-defence, it is incumbent on him to discharge, in order to stamp on the very face of his history those outward and visible signs of conscientious and laborious truthfulness, which can alone invest it with permanent utility and reputation.

But accuracy, unfortunately, is not one of M. de Lamartine's qualifications for writing history. Those who are most conversant with the events of the Revolution accuse him of frequent exaggeration. Imitating a habit of the ancient historians, which is not permitted by the present canons of historical propriety, he does not scruple to embody his own conception of the feelings of the various personages of his narrative in imaginary speeches, which he puts into their mouths. In some instances an ordinary acquaintance with the history of the Revolution exposes inaccuracies which are not to be attributed to any bias or misconception, but to sheer carelessness. But even with these very serious defects, this work remains a most valuable contribution to our knowledge of the Revolution. Imperfect as a history, it is a striking and instructive historical study. It brings before us that most stirring and important period with a clearness and vividness that all previous descriptions, except some of Carlyle's, have failed to realise: it presents us on the same page with distinct, highly-finished sketches of the principal actors, and with a careful and deliberate judgment on the causes, the nature, and consequences of the events. These are the objects at which the

author has evidently aimed; and he has, in our opinion, attained them with greater success than any other writer on the Revolution. Skill and power in the representation of remarkable scenes and incidents was an excellence which M. de Lamartine's descriptive powers gave us reason to anticipate: and, he has combined this excellence with more discrimination and justice in his estimate of characters and events than we were prepared for. Though occasionally too apt to judge one man somewhat too harshly, or to elevate another into a species of imaginary hero — though often bewildered by the vastness of the subject, or misled by his own ardent temperament — M. de Lamartine seems to us on the whole to have brought to the consideration of the Revolution a more candid spirit and more wholesome sympathies, than any preceding writer. It is a great and rare merit in a Frenchman writing on that subject in the present day, to be able on the one hand to appreciate the grandeur and justice of the Revolution without silencing the suggestions of human feeling and the simple dictates of morality: and on the other to give full scope to pity and justice towards individuals without allowing those sentiments to abate the ardour of his sympathy with that succession of efforts by which, at an immense cost of personal suffering and wrong, the safety and happiness of a great people were secured.

The period comprised in these eight volumes is the most eventful period of the Revolution. The author selected an incorrect designation when he called his work a 'History of the 'Girondins.' The characters and fortunes of the particular body of men known by that appellation in no respect form the sole or even principal subject of the work. No especial pains are devoted to the elucidation of their policy and position. Instead of being brought into a more prominent position than that which they have occupied in previous histories, or being invested with any peculiar interest, they are thrown rather more into the background, and, if anything, deprived of their real importance and consideration. The existence of their party does not even mark the chronological limits of the work. The narrative commences before their rise, and is continued long after their disappearance. It might with much more propriety be called a History of Robespierre than of the Girondins; but it would most accurately be described as the 'History of the Rise of the 'French Republic.' It comprises the period commencing with the establishment of the Constitution of 1791; continuing through the various occurrences that led to the downfal of that Constitution, the foundation of a Republic in its place, the struggles of factions in the Convention, the gradual consolidation of power in

the hands of the Committee of Public Safety; and closing with the fall of Robespierre. After this begins the second period; which may properly be designated as that of the Decline and Fall of the Republic.

The narrative of this period is prefaced by a review of the state of affairs at its commencement, and an account of some events which immediately preceded the adoption of the Constitution of 1791, and determined its fate, even before it came into being. The death of Mirabeau in the April of that year deprived France of the only statesman who possessed the capacity to guide his country through the Revolution, and enjoyed the amount of public confidence, which is an equally necessary condition for success. We cannot concur with M. de Lamartine, that the energies and utility of Mirabeau were exhausted: and that his efforts to give stability to the new institutions of his country must have failed. Whatever may be said of popular fickleness and of the ephemeral nature of revolutionary reputations, the first want of the public is a leader: And, when a man of Mirabeau's genius had actually been accepted by the people as its habitual leader, a moral power had been created which might, perhaps, have arrested or diverted even the movement of the French Revolution. His death left the Assembly in a state of disorganisation, which continued during the remaining months of its existence. Among the various subordinate orators to whom the removal of their chief gave a momentary superiority, the foremost place fell to the amiable and pure-minded Barnave, who, without any of the qualities of a statesman, possessed the merit of a clear and effective style of speaking.

'Still in the shade and in the rear of the leaders of the National Assembly, a man almost unknown began to bestir himself, moved by unquiet thoughts that seemed to forbid him silence and repose: on every occasion he tried to speak, and attacked every speaker indifferently, even Mirabeau. Hurled from the tribune, he mounted it again the next day: humbled by sarcasms, stifled by murmurs, disavowed by all parties, lost to sight amid the great athletes who fixed the public attention, he was ever beaten, never wearied. You might have said that some secret and prophetic genius revealed to him beforehand the vanity of all these talents, the omnipotence of will and patience, and that a voice heard by him alone whispered to him in his soul, "These men who despise thee are thine; all the windings of this Revolution, which does not choose to look at thee, will end in thee; for thou art placed in its path as the inevitable extreme in which every impulse ends." That man was Robespierre.'

Nothing in Robespierre's exterior gave any indication of the superiority which he was destined to command; there was nothing even to attract the attention of the observer. His ap-

pearance is described as that of a short, slight, ill-made man, with awkward and affected gestures, — a harsh, mouthing, monotonous tone of voice, — a small, rather handsome forehead, swelling out above the temples, as if pressed out by force of eager thought, — deep-set blue eyes, of a somewhat gentle but unsteady expression, half hidden under his eyelids, — a small nose and open nostrils, — a large mouth, with thin contracted lips, — and an unhealthy yellow complexion. The expression of his face was mild, with something of a serious calmness, and a sarcastic smile. But the predominant characteristic of his countenance was the constant eager tension of his features, as if all the energies of his whole soul and frame were always vehemently bent on some one object. And this was the fact. For, passionately devoted to the system of Rousseau, Robespierre had ever before him, from the outset to the end of his career, one constant purpose, — the resolution of realising the ideas of social and political change, which that daring speculator had shadowed forth. To this the ultimate limit of the Revolution, and of the then thoughts of men, he steadily looked, and steadily advanced without ever swerving, pausing, or faltering. His character was not of the kind that enabled him actively to propel the movement in any of its various stages: still, no step was taken in advance, but he was seen moving yet further onwards, and urging the public mind to some more distant point. At the period of which we now speak, he was only beginning to be of importance. He and Petion, another disciple of the 'Contrat 'Social,' an unsuccessful lawyer, but vigorous, sincere, and of a handsome exterior, and fitted to play the part of a popular leader, were at the head of a small group of extreme politicians: though without influence in the Assembly, they were already in possession of considerable strength from their credit with the Jacobins and the mob.

The flight of the Royal Family to Varennes followed the death of Mirabeau, and was probably occasioned, or at any rate accelerated by it. The various details of this interesting story are narrated with exciting circumstantiality: and the attention of the reader is not unwisely riveted on an incident second in importance to none of the strange events by which it is surrounded. The flight to Varennes exercised the most direct and serious influence on the subsequent course of the Revolution. The attempt, its failure, and the mistaken course adopted with respect to it by the Assembly, were fatal alike to constitutional monarchy, and to the peaceful establishment of republican institutions. As regarded the King personally, the whole transaction was justly destructive of all further trust in him. How

far the precariousness of the position, in which his family were placed, excuses the step on private grounds, it is unnecessary to inquire. These were not points which the people of France could appreciate. They saw the King, in the midst of professions of attachment to the new order of things, suddenly quit his capital, and endeavour to place himself at the head of that portion of his army which was least well-affected to the Revolution, and in the position in which he could most easily avail himself of the support of the foreign powers and emigrants. In all this they naturally saw proofs of his irreconcileable repugnance to the changes which were taking place, and a readiness to resist them, even at the cost of civil war and foreign intervention. Thenceforth the avenues to public confidence were closed on him: and he became by inevitable consequence incapable of retaining to any useful end the position of a constitutional monarch.

Happy had it been for both King and people, had the former accomplished his purpose, and succeeded in reachiug the camp of Bouillé. The spirit of the French army at that period negatives the supposition that the King could have detached any considerable portion of it from the national cause, or maintained his ground in any part of France. He would have been compelled to quit his dominions; and when once a fugitive, the forfeiture of his crown would have been admitted by all the world to be a matter of obvious necessity; the Duke of Brunswick's army, instead of deriving strength from his presence, would have had in his weakness merely an additional element of confusion in councils, not very vigorous at their best; while the new executive government of France would have been relieved from all trammels and all suspicions. The jealousies and conflicts of the following year would, in this case, have had no existence. The populace would never have been unloosed and organised for successful revolt. At any rate, its barbarous vengeance would not have been infuriated by the blood of royal victims, and France would have been spared all the disgrace and all the disorder that flowed from the fountain of that useless crime.

Unfortunately, the adverse fates — the unlucky blunders of the Duc de Choiseul, and the perverse acuteness and energy of Drouet, frustrated these desirable results. All might have been well if the royal carriage had completed two more stages in security. Indeed the Constituent Assembly, had it then been equal to the crisis, would have deliberately secured the results which had been missed by chance. Instead of bringing back the King to Paris, and disguising the real character of his flight,

by pretending to consider it as an *abduction*, they should have preferred the fiction, which was consecrated by the example of the English Revolution on the absconding of James the Second—they should have treated the flight as an *abdication* — compelled the royal family to leave the country — and proceeded to provide for the vacancy of the throne. They might, as M. de Lamartine thinks they should have done, have established the Republic at once: —

'The Republic, had it then been legally established by the Assembly acting in the exercise of its rights, and in full possession of power, would have been quite other than the Republic which nine months afterwards was the perfidious and atrocious conquest of the insurrection of the 10th of August. It would have been exposed, no doubt, to the agitation inseparable from the birth of a new order of things. It would not have escaped the disasters natural to a country in its first movements, when frenzied by the very magnitude of its dangers. But it would have been the child of law, instead of sedition: of right, instead of violence; of deliberation instead of insurrection. This alone would have changed the untoward conditions of its existence and its future. It must have been stirring; but it might have remained pure.

'See what an entire change would have been made by the one fact of its having been legally and deliberately proclaimed. There would have been no 10th of August: the fraud and tyranny of the commune of Paris, the massacre of the guards, the attack on the palace, the king's flight to the Assembly, the outrages with which he was there loaded, and lastly, his imprisonment in the Temple, would all have been avoided. The Republic would not have killed a king, a queen, an innocent child, and a virtuous princess. It would have had no massacres of September, that St. Bartholomew of the people, which for ever stains the robe of liberty. It would not have been baptized with the blood of 300,000 victims. It would not have placed the people's axe in the hands of a revolutionary tribunal, to be used by it to immolate an entire generation in order to make room for an idea. The Girondins, coming pure into power, would have had much more strength to combat the demagogues. The Republic, calmly established, would have awed Europe in a very different manner from a riot, authorised by murder and assassination. War might have been avoided; or, if inevitable, would have been more unanimous and triumphant. Our generals would not have been massacred by their soldiers amid cries of treachery. The popular spirit would everywhere have fought on our side, and the horror excited by our days of August, September, and January, would not have repelled from our standards the nations attracted to them by our doctrines: and thus would a single change in the origin of the Republic have changed the fate of the Revolution.' (Vol. i. p. 320.)

Undoubtedly, if the experiment of a republic were a matter of necessity, it would have been far better that it should have

been tried under the circumstances desired by M. de Lamartine. But it seems to us that the Assembly, by boldly declaring the throne vacant on the occasion of the King's flight to Varennes, might have given the Constitution of 1791 a fair chance of stability. If the young dauphin had been placed on the throne, the popular leaders might have wielded the executive power under the name of a regency, and have gradually fashioned the monarchy to work harmoniously under the new constitution. Or, the crown might have been transferred to the younger branch of the royal family; and in this case the undoubted popular sympathies of the Duke of Orleans would probably have rendered his exercise of the constitutional powers of the monarchy endurable to the people, because compatible with the maintenance of the changes effected by the Revolution.

Which of these courses would have commanded the public assent can now only be matter of speculation. We agree with M. de Lamartine, that the course taken by the Assembly was the very worst of all that lay before it. To confer the royal prerogative on a king who had just declared, by his words and acts, his entire alienation from his people, and his disaffection to free institutions, was simply to render monarchy and the new constitution impossible. The step, though dictated by some surviving respect and regard for Louis, was, in truth, the most cruel act that could have been done towards him. 'It 'crowned him,' says our author, 'with suspicion and insult — it 'nailed him to the throne, and made that throne the instrument 'of his torture, and finally of his death.' On the other hand, at this period the King might yet have saved himself. 'On his 'return from Varennes, he should have abdicated. The Revolu- 'tion would have adopted his son, and brought him up in its own 'likeness. He did not abdicate — he submitted to receive a 'pardon from his people — he swore to execute a constitution 'from which he had run away — he was a pardoned king. 'Europe looked on him thenceforth only as a fugitive from the 'throne brought back to his punishment, — the nation as a 'traitor, — and the Revolution as a puppet.'

Brought back a prisoner, amid the execrations of his people, the King, after some weeks of confinement in his palace, and an entire abeyance of his prerogatives, was restored to liberty, in order to enable him to give a free assent to the Constitution. He gave that assent, figured in the ceremony of the inauguration, swore to the Constitution, aud was immediately placed in the unrestricted exercise of all the powers it vested in him. Under these circumstances, the Constituent Assembly separated; and the Legislative Assembly, composed of an entirely

fresh set of men, utterly inexperienced in public affairs, entered, in conjunction with this incapable, discredited, and alienated king, on the management of affairs, and the government of France.

Among the new characters who now appeared on the political stage, there was one particular body of men, which had been preceded by a great, though vague reputation, for ability. These were the deputies of the Department of the Gironde, chiefly young lawyers from the City of Bordeaux, which its commercial wealth, the legal body attached to its parliament, and the influence of its successive eminent writers, had combined to render the centre of considerable refinement, intelligence, and activity. On arriving at Paris, they naturally formed the acquaintance of other deputies of similar opinions, and were eagerly sought out by the public men who aspired to consideration. Buzot, Petion, Brissot, and other ardent advocates of republican doctrines, already constituted a circle, which three or four times in every week collected round Roland and his distinguished wife. To this society the deputies of the Gironde attached themselves; and similarity of opinions and social communication speedily formed out of these materials the nucleus of a political party, to which the eminence of these deputies gave the name of Girondins. Of this party Brissot was the statesman who directed its general policy; while Petion, who had now attained the influential office of Mayor of Paris, was its man of action and practical experience.

M. de Lamartine has evidently no great opinion of Brissot, whom he describes as a needy literary adventurer, who had not passed quite unsoiled through the necessities and intrigues of his early life. But, the vague imputations, which are thus cast on the integrity of Brissot, are repelled by the respect which was felt for him by the purest of his party, and which Madame Roland expresses in her memoirs as the result of an intimate knowledge of him; and by the steadiness and honesty of his conduct throughout the period during which it was most exposed to the public eye. He was well-informed, industrious, and bold. Nevertheless, though a respectable member, he was a very weak head of a party. His views were confused, his system ill-considered and incomplete, his conduct singularly unskilful, and the influence which he undoubtedly possessed in his party was one of the first and surest presages and causes of its ill-success.

Another striking member of the new party was Fauchet, the constitutional Bishop of Calvados. M. de Lamartine is eloquent in his description of the true and generous character and commanding aspect of the Republican, who, in his zeal for his political

creed, never swerved from his Christian faith. Isnard, one of the deputies of Provence, was one of the most brilliant of the orators of the new assembly, and certainly one of the least wise. 'He had ever in his mind the ideal of a Gracchus: he had the 'courage of one in his heart, and the tone in his voice. Still 'very young, his eloquence boiled like his blood: his speech was 'the fire of passion, coloured by the imagination of the South: 'his words burst out like quick throbbings of impatience. He 'was the ardour of the Revolution personified. The Assembly 'followed him out of breath, and reached his excitement before 'it arrived at his conclusions. His speeches were magnificent 'odes, which elevated discussion into poetry, and enthusiasm 'into convulsion; his gestures belonged rather to the tripod 'than the tribune: he was the Danton, as Vergniaud was the 'Mirabeau, of the Gironde.' (Vol. i. p. 271.)

The famous triumvirate of the Gironde, as they were called, were three young advocates who had been elected deputies of Bordeaux. The least conspicuous and effective, as an orator, was Gensonné, to whose calm, just frame of mind, and patient industry, his party were in the habit of confiding the task of drawing up reports and similar documents. 'An unbending 'logic, a bitter and cutting irony, were the two characteristics 'of Gensonné's talents.' A far more effective speaker was Guadet, who, at a very early age, had acquired a high position in his profession. His vehement eloquence carried away the Assembly; of all his party he was the most dreaded by the Court and the Mountain. But the renown of these competitors was at once eclipsed by the indisputable superiority of Vergniaud, whom the unanimous opinion of his contemporaries recognised as the most brilliant of all the orators of the Revolution. In this respect the admiration of those who belonged to his party is supported by the opinion of Madame de Stael, a most competent judge, whose political opinions were adverse to the Girondins, and is justified by the reports of his speeches that have reached us.

'Obscure, unknown, modest, without any presentiment of his own greatness, he lodged with three of his colleagues from the South in a little lodging of the Rue des Jeuneurs, and afterwards in a retired house in a suburb surrounded by the gardens of Tivoli. His letters to his family are filled with the humblest details of domestic management. He can scarcely contrive to live. He watches his least expenses with a strict economy. A few louis, which he has asked of his sister, appear a sum sufficient to support him a long time. He writes to have a little linen sent him in the cheapest manner. He never thinks of fortune, not even of glory. He goes to the post to which duty calls him. In his patriotic simplicity, he is terrified by

the mission which Bordeaux imposes on him. An antique probity breaks forth in the confidential *épanchements* of this correspondence with his friends. His family have some claims to press on the ministers: he refuses to ask anything for them, for fear that asking justice should appear in his mouth to be extorting a favour. "I have tied myself down in this respect to the utmost nicety; I have made myself a law," he says to his brother-in-law M. Alluaud of Limoges, who had been a second father to him.

'All these private communications between Vergniaud, his sister, and his brother-in-law, breathe simplicity, tenderness of heart, and home. The roots of the public man spring out of a soil of pure morality. No trace of factious feeling, of republican fanaticism, of hatred to the King, discover themselves in the innermost feelings of Vergniaud. He speaks of the Queen with tenderness, of Louis XVI. with pity. "The equivocal conduct of the King," he writes in June, 1792, "increases our danger and his own. They assure me that he comes to-day to the Assembly. If he does not pronounce himself in a decisive manner he is bringing himself to some sad catastrophe. Many an effort will have to be made to plunge in oblivion so many false steps, which are looked on as so many treasons." And a little further, descending from his pity for the King to his own domestic situation, "I have no money," he writes, "my old creditors in Paris dun me; I pay them a little every month: rents are high: it is impossible for me to pay for every thing." This young man, who with a gesture crushed a throne, scarce knew where to lay his head in the empire which he was shaking.'

He had been brought up at a Jesuit college, at the expense of Turgot, who was then Intendant of the Limousin; had been intended for the church, from which he shrank at the last moment, and went to Bordeaux to study the law, at the expense of his brother-in-law and the president Dupaty, who became his zealous patron. His early efforts were crowned with success.

'Scarcely has he made a little by his profession, when he strips himself of it, and sells the little inheritance which he had got from his mother, to pay the debts of his late father. By the sacrifice of all he possesses he redeems his father's memory: he arrives in Paris almost in indigence. Boyer-Fonfrède and Ducos of Bordeaux, his two friends, receive him as a guest at their table, and under their roof. Vergniaud, careless of success, like all men who feel their own power, worked little, and trusted to the moment and to nature. His genius, unfortunately too fond of indolence, loved to slumber and give itself up to the carelessnes of his age and disposition. It was necessary to shake him in order to waken him out of his youthful love of ease, and push him to the tribune or into council. With him, as with the Orientals, there was no transition between idleness and heroism. Action hurried him away, but soon wearied him. He fell back into a reverie of genius.

'Brissot, Guadet, Gensonné, dragged him to Madame Roland's. She did not find him manly or ambitious enough for her taste.

His Southern habits, his literary tastes, his attraction towards a less imperious beauty, continually brought him back into the society of an actress of the Theatre-Français, Madame Simon Candeille. He had written for her, under another name, some scenes of the drama then in vogue, of "La Belle Fermière." This young woman, at once a poetess, writer, actress, displayed in this drama all the fascinations of her feelings, her talent, and her beauty. Vergniaud intoxicated himself with this life of art, of music, of declamation, and of pleasure: he was eager to enjoy his youth, as if he had a foreboding that it would soon be cut short. His habits were meditative and idle. He rose in the middle of the day: wrote little, and on loose sheets, with his paper on his knee, like a man in a hurry who makes the most of his time: he composed his speeches slowly in his reveries, and kept them in his memory by the help of notes: he polished his eloquence at leisure, as the soldier polishes his weapon when at rest. He wished his blows to be not only mortal, but brilliant: he was as curious about their merits in point of art, as of their political efficiency. The stone launched, he left the recoil to fate, and gave himself up anew to indolence. He was not the man for every hour: he was a man for great days.'

Vergniaud was of middle size, and of a strong and vigorous make; his lips were somewhat thick, his eyes black and flashing, his forehead broad and open; and his long brown hair waved, like that of Mirabeau, with the motions of his head. His complexion was pale, and his face marked with the small-pox. 'In 'a state of repose no one would have noticed this man in the 'crowd. He would have passed with the common herd, without 'offending or arresting the gaze. But when his soul beamed 'forth in his features like light on a bust, his countenance as a 'whole gained by its expression that ideal splendour and beauty 'which none of his features had in detail. His eloquence lit 'him up. The throbbing muscles of his eyebrows, temples, and 'lips shaped themselves according to the thought that was in 'him, and made his countenance the thought itself: it was the 'transfiguration of genius. The time of Vergniaud was when 'he spoke: the pedestal of his beauty was the tribune. When 'he had come down it vanished: the orator was no more than 'a mere man.' (Vol. iii. pp. 21—25.)

The picture of the party would be incomplete without that of the beautiful, high-minded, and accomplished woman, who was the social centre of the party, who inspired its most generous resolutions, who was its noblest martyr, whose pen has made it known and honoured, and whose life and writings are the truest type of the state of mind in which the party had its origin. We shall not extract any portion of M. de Lamartine's narrative of a life, which the Memoirs of Mde. Roland

have made familiar to every reader. We think that in some respects M. de Lamartine does her less than justice. He appears to have some disposition to attribute her republican vehemence to recollections of the mortifications which she had experienced, when insulted by aristocratic condescension, or contemplating from the attic, in which she visited her friend, the splendour of the Court of Versailles. The tone of Madame Roland's writings does not justify this harsh suspicion. She had the opinions and passions of her times: and with the ardour of her character and her sex exaggerated her republican hopes, and her resentment against the imaginary crimes of kings.

Such were the leading persons in the party of the Girondins, —a party destined to play a brief and brilliant part in the drama of the Revolution, to exhibit much of its greatness, to be involved in many of its most grievous errors, and in some of its crimes, to perish by an unjust death, and to suffer after death from the injustice of posterity. The modern historians of the Revolution, under the influence of a kind of superstitious veneration for its energy and vastness, have had a tendency more or less openly to extol those of the actors in it, who seem to have most entered into its spirit and propelled its progress, and who followed its course to its ultimate development with the most unfaltering constancy. The purity of the motives which actuated the Girondins in their struggle against anarchy, their generous sacrifice of power and life to the cause of their country and humanity, are acknowledged and praised, but at the expense of their intellect and vigour: their unsuccessful efforts are treated as indicating feebleness of will and shallowness of thought; and we are taught to look on them with no less contempt than pity, as a host of declaimers, who were found wholly wanting in capacity to deal with the realities of political life. The general impression produced by M. de Lamartine's history is not at all calculated to raise the Girondins from this unjust depression. For unjust we must consider it. That they failed in the great endeavour to guide the Revolution, that they failed through great and culpable mistakes, their story clearly proves. They have no pretension to belong to that higher class of statesmen, who can comprehend the mind of a people when in a state of revolutionary ferment, can foresee the tendency of ideas and the course of events, and can by their wisdom and energy direct the great movement of mankind to the desired end. The crisis with which they had to deal was too vast for them. But we must not from that conclude, that they were puny men. Rare among the sons of men is the capacity that would have succeeded where they failed! They possessed in a high degree the qualities which

give eminence and influence in free governments — an eloquence never surpassed, a soundness and largeness of views, which experience would have gradually ripened into statesman-like ability, and the courage, probity, and generosity, that, by commanding respect, and inspiring confidence, raise men to be the leaders of their fellow-citizens. Though not gifted with such energy and genius as could bear them safely through the terrible crisis in which they were placed, we may confidently say, that few men in modern times have exhibited a fairer promise of the qualities which, in the ordinary course of settled government, best fit their possessors for the safe and useful conduct of affairs.

The misfortune of the Girondins was, that, when they arrived in Paris, and suddenly found themselves the leading men in the legislature, which was to conduct twenty-five millions of men through a Revolution, the science of politics was practically unknown to them. What books could teach they had learned; but the institutions of their country had excluded them from all acquaintance with public business; and it unfortunately happened, that hardly one of them had, by his previous occupations, acquired any knowledge of the art of managing men. They shared that general indignation against the abuses of the old system of things which pervaded the whole heart of France; their minds, like those of most of their generation, were fraught with an enthusiastic reverence for the great men, and institutions of the ancient republics; and they hoped so to direct the course of government and legislation, as, either under the newly established Constitution, or under openly republican forms, to secure to their countrymen the imagined blessings of democracy. They found no leaders to whom they could attach themselves. The prominent men of the late Assembly had almost disappeared from public life; nor were either Barnave or Lafayette, who were recognised as the founders and principal supporters of the new Constitution, competent to mould and inspire a party. The Girondins were left to their own guidance. New to public life, they had to bring new institutions into safe and steady operation, in a society torn to pieces by the violence of the changes already effected, and by the passions which the convulsion had excited.

M. de Lamartine thinks that the original error of the Girondins was in not at once proclaiming the Republic on the meeting of the Legislative Assembly. It is only as the next best course to that, that he thinks they should have made a more determined and sincere effort to uphold the Constitution of 1791. The course suggested by M. de Lamartine would have been in-

finitely preferable to that actually taken by the Girondins. But we think that their first duty was, to make every effort to maintain the Constitution which they found established; and that their great error was, in ever resorting to insurrectionary force to effect the subversion of the institutions to which the nation had given its assent.

For we cannot think that the Constitution of 1791 was so utterly impracticable, but that prudence and vigour might have upheld it for some little time until the public mind should cool, and the amendments, which experience might prove necessary could be calmly and safely applied. A single Chamber passing laws by a single vote, under the influence of any momentary influence, was not calculated to continue for any length of time the legislative institution of a great and civilised nation. While it lasted, it must have been turbulent and democratic; but, the instant collision into which it was brought with the royal authority, recognised by the Constitution, might, it would seem, have been avoided, had the right use of the prerogatives vested in the Crown been understood and enforced. M. de Lamartine thinks rightly that the direct cause of difficulty in the Constitution of 1791, lay not in the want of power in the Crown, but in the King's possessing an amount of authority incompatible with the other provisions of the Constitution. The legal independence of the other branches of the legislature, which is secured to the Executive by the letter of the British Constitution, would, if asserted in fact, be fatal to the stability of any mixed form of government. Since the establishment of parliamentary government in England, its compatibility with an hereditary monarchy has been maintained by the recognition of the principle, that the ministers of the Executive must always be taken from the party possessing the actual parliamentary majority. The power of the Crown is really upheld, not by its legal authority of counteracting, but by all the influences which enable it to modify, the will of parliament. Of that will, resulting from the conflict of all the various influences that determine its character, the executive government is and must be the passive instrument. The democratic elements of the Constitution of 1791 would have allowed the Crown to exercise but little influence in the legislature; and the executive authority would necessarily have been the instrument of a very democratic government. But it would have been better that such should be the case than that anarchy should be inevitably produced by the conflict between the two independent wills of the Executive and the Legislature.

The powers which the Constitution of 1791 vested in the

King were quite sufficient to prove formidable obstacles to the power of the legislature. He possessed a suspensive *veto* on all its acts, which, in the emergencies of a revolution and a war, was quite as effectual as a more complete authority. He was entrusted with the uncontrolled nomination of all the ministers, and of every officer of the civil and military service of the kingdom. He enjoyed a civil list of a million sterling, of which the disposal rested wholly in his pleasure. It was impossible that a free people and a sovereign legislature could long leave such powers in hostile, or even suspected hands. The only chance for the maintenance of the royal authority lay in placing it entirely at the disposal of the nation. The King should at once have waived the independent exercise of prerogatives, which he could not exert in opposition to the national will, without the downfal of the whole system. He should have taken the ministers pointed out by the dominant party in the Assembly; abstained, in conformity with the invariable practice of the English Constitution, from exercising the *veto* placed in his hands; and laid the accounts of his civil list before the Assembly. The just judgment of mankind would have relieved him of all moral responsibility, for the formal acts done in pursuance of a deliberate renunciation of powers, which could not be freely exercised without compromising the public tranquillity. The whole present, as well as future, responsibility of government and legislation, would have been thrown on the Assembly; and the executive authority, avowedly the prize of the conflict, and the instrument of the successful party, would have been removed beyond the possibility of collision with the people. Free from reproach for all the ills that might result from the mistakes or violence of factions, the King might have preserved the existence of the monarchy; and when all parties had ultimately weakened and discredited each other, or any one of them had succeeded in establishing itself in power, might, in either event, have availed himself of the exhaustion of the nation, or of the restoration of order, to re-assert the rights and consolidate the power of the Crown.

Unfortunately, the disposition of the Court induced the deposed monarch rather to avail himself of any fragment left him out of the wreck of his former authority, than, by wise concessions, to prepare for a future recovery of the whole. The picture which M. de Lamartine gives of the character, and his narrative of the conduct of this unhappy prince, leave such an impression of his extraordinary weakness, that, fearful as were the necessary perils of the Revolution, we cannot but feel that their fatal result was mainly to be ascribed

to the incapacity of Louis. Meaning well, without a thought of vengeance or triumph, and sincerely desirous of the public good, his mere weakness produced the appearance, and even the actual effect, of the worst designs, and the deepest perfidy. With no notion of the state of affairs — no conception of the course which he ought to adopt — he depended entirely on the suggestions of others. He took every body's advice: the worst parasites, the most open opponents, were in turn resorted to by him. Unable to discriminate between good and bad counsels, he followed one man's advice to-day, and held language in conformity with it; and the next day took the directly opposite course, and used language which gave a character of falsehood to the words which he had uttered the day before. No one could trust, no one could fix, and, consequently, no one could effectually guide or serve him. Among all those who principally directed him, there was not, as M. de Lamartine says, one man who could understand, much less one who was capable of resisting, the Revolution. He was chiefly under the influence of the Queen; and he could hardly have been under worse. M. de Lamartine's pity for the sufferings of Marie Antoinette — his admiration of her beauty and courage, do not blind him to her faults. She had the tact that could conciliate individuals, and the intrepidity which bore her nobly through personal emergencies; but she had none of the political knowledge or genius — none of the patient courage, which would have enabled her to give a wise direction to the feeble mind of her husband. Personal resentments and predilections for ever outweighed the dictates of policy; and the vehemence and quickness of her impulses rendered her energy as fickle as the King's weakness.

'Measures of vigour, corruption of the Assembly, sincere adoption of the Constitution, attempts at resistance, an attitude of royal dignity, repentance, weakness, terror, and flight, all were conceived, tried, prepared, determined upon, abandoned the same day. Women, so sublime in their self-devotion, are rarely capable of the steadiness of purpose and the coolness necessary to a plan of policy. Their policy is in their heart; their feelings act too closely on their reason. Of all the royal virtues, they have none but courage: they rise often to heroes, never to statesmen. The Queen was an additional example of this. She did the King much mischief: gifted with more ability, more soul, more character, her superiority served only to inspire him with confidence in fatal counsels. She was at once the charm of his misfortunes, and the genius of his ruin. She led him step by step to the scaffold, but she mounted it with him.'

Every act of the Court during the year that passed between

the acceptance of the Constitution and the 10th of August, 1792, aided and precipitated the catastrophe. It is not too much to say, that they formed one long treason against the Constitution to which the King had sworn. Throughout, the King had two ministries, the one avowed and responsible to the nation; the other consisting of such men as Calonne and the Baron de Breteuil, who were organising, under the King's auspices, the invasion of France by the emigrants and foreign powers, and thus fomenting the two main causes of the destruction of the monarchy. The emigration was the master evil; it stripped France of the very class, whose presence in their own country would have been the most effectual support to the throne. A small portion even of the 20,000 emigrants, whom our author states to have been at one time in arms on the frontier, might have baffled any of the decisive movements of the Revolution. The course pursued by the emigrants, coupled with the hostile preparations of the foreign powers, excited to the utmost pitch the alarm and anger of the French people. The Court, though their safety depended on the removal of all causes of excitement, could not abstain from encouraging the invaders. They did it unsteadily, it is true. A favourable vote, or any mark of confidence on the part of the Assembly, or any demonstration of popular favour, would at any time raise the King's hopes, and make him write off to his agents at Coblentz to discontinue their hostile preparations. The next day came some encroachment by the Assembly, or some insult from the mob around his palace, and he had no hope but in the success of the invasion. His acts too constantly justified the suspicions of the people. The ministers of his choice were enemies of the Revolution; and those whom the popular feeling for awhile forced on him, were speedily dismissed from his councils. The strong measures to which the Assembly had recourse for what we cannot but regard as justifiable purposes of self-defence, were obstructed by his unwise exercise of his *veto*. His large revenue was undoubtedly applied to purposes inconsistent with good faith and the public interest; and the mystery in which the expenditure of the civil list was kept, of course led to suspicions which went far beyond the truth.

It would, no doubt, have been a task of great difficulty for the leaders of a popular party to uphold the Constitution in despite of the public excitement, and of the impulse given to it by the suicidal conduct of the Court. But the Girondins cannot be relieved from the charge of having aggravated the intrinsic difficulties of the state of affairs by their own errors. They commenced the session of the Assembly by petty encroachments

on the royal dignity, which lowered the authority, and irritated the feelings of the King. They then committed the far graver fault of encouraging the warlike feeling of the country, and of forcing on the war with Austria, which prudence might have averted, or, at any rate, postponed. To avoid or postpone it was the obvious interest, not merely of their party, but of their principles. They looked, however, only to their immediate object—the coercion of the Court; and by bringing on a war for that purpose, they swelled and prolonged an excitement, which was sure to frustrate all their ulterior schemes of tranquil government. The bright period of Robespierre's history is that of his determined opposition to this war. His popularity, and his exertions in the Jacobin Club, for a month counterbalanced the public feeling, the efforts of the Girondins, and the violence of the popular agitators. It was in the long and angry discussion of this subject, that he was for the first time brought into violent collision with the Girondins, especially with Brissot; and it is a remarkable proof of his extraordinary ability, that while asserting the unpopular cause, he greatly augmented his own popularity, and weakened that of his rivals, who were lending themselves to the passions of the people.

But the capital error of the Girondins was their rupture with Dumouriez. The only chance of maintaining the Constitution lay in strengthening a popular minister, and enabling him to keep the executive in harmony with the Assembly. Narbonne was the first of the ministers of Louis who thought of establishing his ministry on the confidence of the Assembly. His ill-success resulted not so much from his own acts, as from his inability to disarm the suspicions excited against him by his aristocratic birth, and from the unpopularity of the party to which he was supposed to owe his elevation. Unsupported by the Assembly, he was dismissed by the King, who, in his turn, distrusted him on account of his popular professions. Dumouriez sought to attain the same object as Narbonne, under more favourable circumstances, and with far greater qualifications. Elevated to office by the influence of the Girondins, he had the sagacity to take the only course that would have enabled them to consolidate their power; and their misfortune was, that in the man whom they had taken as an instrument, they did not discern, or would not recognise the qualities that they wanted in a leader.

Dumouriez had described the true policy to be pursued by the King, in a phrase which he used a short time before his accession to office. 'If I were king of France, I would baffle 'all these parties by putting myself at the head of the Revolu-'tion.' And on this principle he acted for a time most success-

fully, winning the confidence of the King and Queen in spite of their strong prepossessions against him; humouring the Jacobins by going at once to their sittings, and, with the cap of liberty on his head, explaining to them the principles on which he intended to govern; taking, in all his measures, a strong popular and national line; executing his plans with energy and skill; and using his influence with the King and Queen to obtain the withdrawal of the *veto* from decrees which had passed the Assembly. No policy could have been better adapted to promote the interests of the Girondins, as well as those of the country. Personal differences seem to have occasioned the breach between them and Dumouriez. Madame Roland detected his ambition, and inspired suspicions of him, which Dumouriez unfortunately confirmed by manners and morality savouring so much of the old *régime* as to shock the republican puritanism of the Girondins. His commanding tone and superior abilities gave umbrage to his colleagues; while he, on the other hand, grew impatient of their narrow views and want of practical skill. In the vehement dissensions which at this time broke out between the Girondins and the yet more extreme section of the Revolutionists, he thought he saw the means of obtaining support for his policy in the event of a rupture with his old supporters. He accordingly entered into close communication with Danton, in whom he found a sagacity and vigour congenial to his own. Emboldened by the prospect of assistance from the Jacobins, he encouraged the King to dismiss the three Girondin ministers, Roland, Clavières, and Servan; and was prepared, by giving effect to a thoroughly popular policy, to defy the anger of the majority who supported the dismissed ministers. In this attempt he was baffled by the King's refusal to sanction the decree against the refractory priests, and resigned. With his retirement from office vanished the last hope of a popular ministry. The King was driven to take his ministers from the known opponents of the Revolution; and the Girondins, inflamed by personal mortification, and giving way to a boundless distrust of the Court, directed their attacks against the existence of the monarchy.

The dismissal of the Girondin ministers was followed, in a few days, by the outrages of the 20th June, 1792, the guilt of which principally rests with Petion. The momentary reaction which these outrages provoked, was neutralised by Lafayette's imprudent manifestation, and by the advance of the Allies on Paris. The Girondins and Jacobins suspended their disputes for a time, in order to unite against the refractory general and the invading enemy. The leaders of the Assembly threw off all disguise of attachment to the Constitution; and Vergniaud, in his mem orable

speech on the 'Dangers of the Country,' openly broached the deposition of the King. The levy of troops to serve against the invading armies was made the pretext for filling Paris with a revolutionary force. Barbaroux brought up the Marseillais. On the other hand, the Court prepared their means of defence. The excitement grew, as the two parties found themselves face to face. The popular fury broke forth into multiplied and ferocious outrages on the real or supposed adherents of the Court. Suddenly the insane proclamation signed by the Duke of Brunswick, as general of the invading army, made its appearance in Paris. Not a moment was to be lost in taking the powers of government out of the hands of a Court who were, in reality, counting every stage of the Prussian march as a day nearer to their deliverance. The insurrection of the 10th of August took place. The Court had considerable means of resistance at their disposal; but by a succession of mistakes and mischances they allowed the well-directed resources of the mob to obtain an easy triumph. The King left his palace, and the monarchy was abolished.

Of all these remarkable incidents M. de Lamartine has given graphic and stirring descriptions. The wild elements of the insurrectionary force of Paris are brought before our eyes. We have the various picturesque biographies of Santerre, Saint-Hurugue, Theroigne de Mericourt, and the other strange leaders of that terrible host. It was in a lone house at Charenton that all these movements were planned. There the details of the 10th of August were concerted on the night of the arrival of the Marseillais, amid the terrors of a memorable thunder-storm. The electric fluid was everywhere attracted by the crosses which occupied the highest pinnacles, or stood isolated on the roadsides; and the next morning the ground in the neighbourhood of Paris was found ominously strewn with the prostrated emblems of religion.

Of the 10th of August itself we have a very minute narrative. The first sketch is taken from an account given by Lucile, the young wife of Camille Desmoulins, who describes the evening and night of the 9th, and morning of the 10th, which she passed at Danton's house, in company with his wife. Here we have the insurrection as it came home to the families of those who had conspired the movement: the reckless excitement produced by the anticipation; the fears that gradually thickened as the reality began to exhibit itself, and armed bands began to pass; as, one by one, friend and husband armed himself to take part in the fray, and as the appalling clang of the tocsin surmounted the din; the night of agony watched through by the women, crouching, listening, and wailing, until they fainted at the sound

of the cannon. Danton alone is calm: after having set the whole in motion, he leaves its details to take their chance in the hands of the subordinate but more immediate agents, and goes quietly to bed.

Then we are taken through the same awful night as it was passed by the Royal Family in the Tuileries, with the dreaded morning breaking on them amid the first notes of assault and the preparations for defence. The King makes his appearance, worn and haggard, with his dress disordered, and his manner exhibiting the confusion, not of fear, but of shyness. The Queen preserves her haughty air, and intrepid spirit; which is only broken by the fruitlessness of her efforts to inspire her husband with the energy required by the crisis. She sees him commence his review of the troops; her hopes rise with the shouts of 'Vive le Roi!' raised by the gentlemen who fill the palace, and by the loyal battalions in the courts; they are dashed when the King, instead of assuming the bearing and uttering the few bold words that would have stimulated his defenders, stammers forth one or two disjointed purposeless phrases, which only communicate to others his own irresolution; and they are finally extinguished as she sees him return amid hisses from his luckless circuit of the gardens, while band after band of the National Guards march over and range themselves with the assailants. We accompany the family in their mournful passage to the Assembly, and during the mortal agony of those sixteen hours passed in the narrow heated box of the *logographe.* The King eats, drinks, and chats with the deputies: the Queen sits silent, exhausted, vanquished; her countenance flushed with the mortification of defeat, but still lit up with unyielding pride and resentment. The cannon sounds close: the Swiss are said to be victorious: the deputies swear to die at their posts. This hope, too, passes away: the victorious mob enters to announce its triumph, and parade its trophies. The royal captives are doomed to sit through the long debate in which they hear their fate discussed, and their downfal decided; and are then finally dismissed to prison. We give but a faint outline of the startling picture drawn by M. de Lamartine: the reader who would receive the full impression of its effect must read the work itself.

The Girondins, when they had triumphed over the Monarchy, seemed at first scared by their own success. They scrupled at once to proclaim the Republic: and not only left the responsibility of doing so to a Convention to be immediately summoned, but excited in the meantime the distrust of the victorious people by votes, which seemed to indicate an intention of maintaining the

institution of royalty. The dismissed ministers were replaced in office—the real power, however, was at once engrossed by Danton; who now stood forward for the first time in a prominent position, as Minister of Justice, and immediately asserted his incontestable superiority over his colleagues. In truth, he wielded the whole executive authority, because he had organised it, and called it into action. When the Girondins, after the 10th of August, found that the result of their efforts had been to make Danton and the Commune rulers over them, they were taught too late how grievously they had erred, with respect to the course which they had pursued for the subversion of the Monarchy. They had originally assailed that institution, in the vain imagination that a government might be pulled down and built up again by the mere power, with which oratory sways an assembly and excites a people. They understood nothing of the process, by which the popular force was to be organised and directed; and when they at last determined on an insurrection, they had recourse to Danton and the Commune to furnish its means. The insurrection over, the means remained at the disposal of those who had created them. The Commune, led by Danton, Marat, and Robespierre, and embodied in the force which had been organised under Santerre, governed Paris, and, through Paris, France. Happy had it been for the Girondins, had this lesson taught them, that, before they could hope to establish an orderly republic, in place of the monarchy which they had destroyed, they must themselves, not only re-construct the machinery of executive government, but provide, and keep in their own hands, the physical means by which its existence was to be maintained, and its authority enforced. Unfortunately, to the end of their career, they seemed to conceive that they were administering an established government, instead of working out a revolution; and that the votes of an assembly were the end, and speeches the means of governing. Too late they learned on the scaffold that the controversies in which they had engaged, were only to be settled by 'pike and gun.'

The reign of the Commune, between the 10th of August and the meeting of the Convention, derives a horrible celebrity from the massacres of September. M. de Lamartine has been at some pains to collect various proofs of the deliberation, with which the details of this horrible butchery were concerted. He condemns Marat as having instigated, Danton as having sanctioned, and the Commune as having perpetrated it. Excuses which have been offered for it, he rejects with scorn.

'History,' he says, 'should represent the conscience of mankind. The voice of that conscience will ever condemn Danton. It has been

said that he saved his country and the Revolution by these measures, and that our victories are their excuse. This is the error into which he fell. A people that has need to intoxicate itself with blood in order to impel it to defend its country, must be a people of scoundrels and not a people of heroes. Heroism is the very reverse of assassination. As for our Revolution, its *prestige* was in its justice and its morality. This massacre went to tarnish it in the eyes of Europe. Europe, it is true, did raise a cry of horror: but horror is not respect. A cause is never served by being dishonoured.'

And he compares the effect of this massacre on the character of the Revolution to that of the Massacre of St. Bartholomew on the cause of the Church of Rome. Sound policy, as well as the moral sense of mankind, confirm this judgment. The measures originally proposed by Danton for seizing the persons of those who were well known to be disaffected to the Revolution, might be justified by the necessities of the crisis. The commander of a besieged city is authorised to deprive those whom he knows to be plotting against the public safety, of the power of doing harm; and the situation of Paris, expecting the Prussians at its gates, might be sufficient warrant for the imprisonment even of thousands of suspected conspirators. But the cold-blooded slaughter of disarmed prisoners was an act of useless as well as revolting cruelty. The genius of Dumouriez had already saved France. The bloody licence given to the assassins only heightened into frenzy the passions of the populace. It maddened them to fresh acts of violence, and deterred all men of justice and moderation from taking any further part in connection with persons who had made such crimes a part of their policy. The guilt recoiled on Danton and the Revolution. It for ever separated him from the party, by whose support he might have governed France: and it was found to have paralysed his arm, when the time came in which he wished to put a stop to violence, and restore the rule of humanity and reason.

A curious anecdote is given by M. de Lamartine, on the authority of a surviving friend of Robespierre and St. Just, whose name unfortunately is kept back. We could wish to be able to estimate the degree of foundation for a story which casts a singular light on the strange character of Robespierre. At the period of the massacre he was a member of the Commune; but, seeing the turn affairs were taking, had for some days foreborne to attend its meetings. He had no share in what was done; had no power of preventing it. As in the case of preceding movements, he did nothing, blamed what was being done, but let it go on; and when done, took it as a necessary step in the Revolution, and defended it.

'On the 2d of September, at eleven o'clock at night, Robespierre and St. Just went out together from the Jacobins, exhausted by the mental and bodily fatigue of an entire day passed in tumultuous debates, and big with so terrible a night. St. Just lived in a small lodging in the Rue Ste. Anne, not far from the house of the joiner Duplay, where Robespierre resided. Talking over the events of the day, and what was threatened for the morrow, the two friends reached the door of St. Just's house. Robespierre, absorbed in his own thoughts, went up to the young man's room in order to continue the conversation. St. Just flung his clothes on a chair, and prepared to go to sleep. "What are you doing?" said Robespierre. "I am going to bed," answered St. Just. "What! can you think of sleeping on such a night?" replied Robespierre. "Do you not hear the tocsin? Do you not know that this night will probably be the last for thousands of our fellow-creatures, who are men at the moment you go to sleep, and will be corpses when you wake?"

St. Just answered with one of the commonplaces of the day, and went to sleep. Early the next morning when he woke, he saw Robespierre pacing up and down the room, and every now and then pressing his face close to the window to watch the daybreak, and listen to the sounds in the street. St. Just asked him what brought him back so early, and found to his astonishment that he had not left the spot all night.

"Sleep!" said Robespierre; "what! while hundreds of assassins were cutting the throats of thousands of victims, and while blood, whether pure or impure, was running like water in the gutter! O no," he continued, in a deep voice and with a sarcastic smile on his lips, "I have not been to bed, but have watched, like remorse or crime: ay, I have been guilty of the weakness of not sleeping; but Danton, he has slept!"'

The instigators of the 10th of August cannot be acquitted of having called into activity that spirit which produced the massacres of September. But we must not deny to the Girondins the honour due to them. As soon as they recovered from the first stupor into which this gigantic crime threw all France, they raised their voice in loud and uncompromising denunciation of it. Roland, while the carnage was going on, exhausted whatever means he could command to stop it; but both he and Petion were utterly powerless. In proclamations, in letters, and in protests, Roland, at the imminent peril of his life, continued his war with the Commune. Indignant at the enormity of the crime itself, at the discredit cast by it on the Republic, and at the predominance given to both the most anarchical doctrines and the most worthless men, the Girondins now perceived the necessity of checking the progress of disorder. From being the leaders of the movement, and the instigators of insurrection,

they came in a few weeks to be regarded by the populace as the counter-revolutionary party, against whom the next efforts of the friends of the Revolution must be directed. From this time the hopes of every friend of order and humanity rested on them as the party who would put an end to the turmoil and carnage of the Revolution.

The aspect of affairs at the first meeting of the Convention on the 20th of September, 1792, was most favourable to the Girondins. Though the elections of Paris, taking place in the very days that followed the massacre, had returned a deputation entirely composed of Jacobins, the representatives of the Departments had been elected under very different feelings. The unanimous choice of Petion as president showed the disposition of the Convention; and the Girondin leaders found themselves at the head of a large and determined majority. Had they been statesmen as well as orators, that majority and the public opinion of France gave them the means of establishing their power. But they entered the Assembly, smarting with mortification at their recent subjection to the Commune; and their first thought, was how they should use their majority to throw off that ignominious yoke. Instead of waiting until they had consolidated an efficient executive, they rushed into the contest, unprovided with any means of combating the physical force of their antagonists. They endeavoured at once to bear them down by the weight of public feeling. Nor did they confine themselves to the legitimate weapons with which a good cause furnished them. There were reasons against breaking at once with Danton. They saw in Robespierre their most formidable antagonist, and were probably stimulated by vindictive recollections of their bitter conflicts at the Jacobin Club. They accordingly directed the main force of their attacks against the one public man who had hitherto, less than any other, participated in any of the disorders of the Revolution. On the strength of some frantic declamations of Marat, whom they endeavoured most unfairly to associate with him, and of the foolish talk of some insignificant demagogues, they gravely accused Robespierre of aspiring to establish a dictatorship. Such was the substance of the charges brought against him by Barbaroux and Louvet. The accusation gave him an opportunity of vindicating himself, and of humbling his opponents in one of the most skilful and triumphant of his speeches. These ill-judged attacks imparted to the proceedings of the Girondins a character of petty and malignant rivalry, subjected them to the mortification of defeat in a personal conflict, and

weakened their hold on the majority by justly diminishing its confidence in their discretion.

But the trial of the King soon gave a more serious occupation to the contending parties. Actuated by that mistaken notion of equity which in like circumstances brought Charles I. to the block, the voice of the people demanded, as a matter of equal justice, that the deposed monarch should be subjected to the same fate as the laws of treason would infallibly have inflicted on his opponents, had he been successful in the contest. None of the leading men of either party, according to M. de Lamartine, shared this feeling, or desired the death of Louis; yet each consented, each exhibited a rivalry of eagerness to sacrifice the victim, in order to retain its hold over the people. The Girondins therein undoubtedly sinned the most deeply against their own principles and policy. But the conduct of the leaders of that party has been too hastily ascribed to mere cowardice. They did not, in truth, so much abandon their own views, as they made an ill-judged attempt to gain their object by indirect means. When the point came to be discussed in their councils, they found that they were opposed by some of the principal men of their own party — by Fonfrède, Ducos, Barbaroux, and Buzot, whose republican fanaticism required the death of the King. Imagining that, without their support, they would be unable to save the King's life, they adopted a plan of action suggested by Sieyes. They agreed to vote for his death, but to subject the decree of the Convention to ratification by the primary assemblies. The plan, supported by a plausible conformity with democratic principles, was obviously impracticable. It involved the prolonged agitation of a perilous question. It laid the Girondins open to the imputation of wishing to create dissension between the different parts of France. The people regarded it as a trick. The votes of the Gironde decided the judgment of death, which their influence, boldly exerted, would, in all human probability, have averted. And that judgment once pronounced, the expedient, by which its execution was to have been stayed, was unhesitatingly rejected.

The speeches of Robespierre contain the simple and forcible exposition of the grounds on which the execution of Louis is defensible as an act, not of justice, but of state policy. 'Louis 'must die because the country must live.' The noble reply of Vergniaud was contradicted by his vote. M. de Lamartine temperately examines the arguments on both sides, and his conclusions will not be new to any Englishman whom the earlier precedent in our own history shall have ever driven upon a similar re-hearing.

'Exhausted and discredited by four years of unequal struggle with the nation, twenty times placed at the mercy of his people, without credit with the soldiery, with a character of which the timidity and indecision had been repeatedly proved, fallen from humiliation into humiliation, and step by step from the height of his throne into a prison, Louis XVI. was the only prince of his race to whom it was impossible ever again to dream of reigning. Abroad he was discredited by his concessions: at home he would have been the patient and inoffensive hostage of the Republic, the ornament of its triumphs, the living proof of its magnanimity. His death, on the contrary, alienated from the French cause that immense portion of every people which judge human events only through the heart. Human nature is merciful. The Republic forgot that it gave to royalty a character of martyrdom, and to liberty that of vengeance. It thus prepared a re-action against the republican cause, and arrayed on the side of royalty the sensibility, the interest, the tears of a portion of every people. Who can deny that pity for the fate of Louis XVI. and his family, had a great part in the revival of royalty some years after? Unsuccessful causes have returns of favour of which the motives are often to be found only in the blood of the victims cruelly sacrificed by the opposite party. Public feeling, when once moved by a sense of its injustice, is only set at rest when it is, so to speak, absolved by some signal and unexpected reparation. The blood of Louis XVI. was in every treaty which the Powers of Europe contracted for the purpose of branding and stifling the Republic: the blood of Louis XVI. was in the oil which consecrated Napoleon so short a time after all the vows of liberty: the blood of Louis XVI. was in the monarchical enthusiasm which the return of the Bourbons at the Restoration revived in France: it mingled, even in 1830, in that repugnance to the name of Republic which threw the undecided nation into the arms of another dynasty. It is republicans who should most deplore this blood, for it is their cause that it has stained, and it is that blood which has cost them the republic.'

The details of this catastrophe afford ample scope for the descriptive powers of M. de Lamartine. It is much to the credit of his moral judgment, that he has not sought to heighten the effect by investing the sufferers with unreal virtues. The mournful tale of the imprisonment in the Temple, with all its anguish and all the tortures inflicted by the vulgar insolence of the gaolers—the picture of the King, carried along to his trial, pale, unshaved, with his clothes hanging loosely on his attenuated frame—and the last agonies of his separation from his family, sensibly touch our pity. We admire the calm resignation, and the unfailing gentleness which characterised his whole demeanour through these scenes of suffering, and dictated the Will which emanated from the solitude of his own thoughts. But the impartial narrative lowers our previous conception of the dignity of the monarch's deportment. His feeble capacity suggested

to him the expedients by which an ordinary prisoner endeavours to evade his condemnation, instead of the passive superiority with which a martyr receives his doom; and we cannot help recalling the stately silence with which Charles I. rebuked his judges on the like occasion.

A momentary lull followed the catastrophe: and then the deadly war of the two contending factions broke forth afresh. During the first months of 1793, the Girondins assailed the Commune, and endeavoured to discredit the Mountain by continuing to associate them with the frantic ebullitions of Marat, and by reviving the charges of dictatorial designs against Robespierre. The Mountain retorted with accusations of counter-revolutionary projects and federalism. The Girondins, favoured by the Plain, possessed a large, and it must be said, a steady majority in the Convention. Even in Paris they commanded the support of the middle classes. Their party occupied all the most important offices in the ministry. The successes of Dumouriez gave glory to their administration of the government; and they relied on the co-operation of his army against their antagonists. Roland had funds at his disposal to keep the newspapers in pay, and circulate the views of his party throughout France. To this party the great majority of the departments adhered most warmly. A little skill in organising the force of the executive government, and patience until they should have got together the means of acting with effect, would apparently have insured them an easy and certain triumph. Danton, anxious to clear himself from the guilt of September, and to erect a strong and respectable government, was ready to become the ally of the Girondins, and bring to their aid his sagacity, his courage, and the vast popular force which he wielded. Vergniaud, and other leaders of the party, appreciated the value of his aid, and the wisdom of temporising with their opponents. Their wisdom was overruled. The younger members of the party, inflamed by the counsels of Madame Roland, would allow of no truce with the advocates of anarchy and massacre. Marat was again assailed; the people of Paris took the part of that furious organ of their passions and prejudices; and the Mountain defended the favourite of the people. By degrees the leaders were involved in the fray; and Robespierre renewing his accusations against the Girondins, exasperated the people against them.

But the Girondins, while thus provoking the conflict, made no preparation for bringing it to a successful issue. They allowed their friends to be successively driven from the chief offices of government, and to be replaced by men indifferent or opposed

to them, at the same time that all the lower offices in every department were filled with creatures of the Jacobins. They even permitted the various bodies of *fédérés*, who formed a military force on which they could rely, to be sent out of Paris, until they were left without any means of repressing the mob. While they exhausted the time and patience of the Convention in personal recriminations, Danton was suffered to dictate the policy of the Republic. When the insurrection of La Vendée broke out, the majority began to follow the only leader who seemed to have matured the measures that were required by the crisis; and, in spite of the opposition of the Girondins, at his suggestion the Convention created the revolutionary tribunal, and voted the first laws against the *aristocrates*, and for taxing the rich in order to arm the people.

In the meantime the *Commune* were noways disposed to resign their power to the Girondins, or leave that party leisure to consolidate a force which might control them. On the 10th of March an insurrectionary movement was attempted with the double object of intimidating the Convention, and of murdering the principal Girondins at their own houses. Timely information enabled the menaced deputies to frustrate the last object; and the energy of the minister Beurnonville, with a force of *fédérés* from Brest, awed the assailants. Danton, who alone could organise a decisive popular rising, kept aloof, and, indeed, protected the Girondins.

This uncertainty, however, could not long last, in face of the increasing dangers of the Republic. The troubles of La Vendée grew more serious. The French army was defeated and driven out of Belgium; and in the first days of April the public terror rose to its height on intelligence of the defection of Dumouriez. The contending parties sought to cast on each other the odium of connexion with the traitor. The Girondins, Lasource and Biroteau, seized the first occasion of making a detailed charge against Danton, as an accomplice of his treason. Enraged and alarmed at a charge to which his intimate relations with Dumouriez gave some countenance, Danton saw the necessity of throwing himself at once into the arms of the Mountain. He assailed the Girondins with the customary accusations of counter-revolutionary projects, and with furious gestures declared, that from that moment there should be no peace or truce between himself and those who had wished to save the King. He at once placed himself at the head of their assailants, and set about combining the means by which their power might be destroyed.

For six or seven weeks a conflict was kept up between the

powerless Assembly and the minority, which was backed by the physical force of Paris. The Girondins, in order to compose an efficient executive within the Convention itself, constituted the famous Committee of Public Safety. They put Marat on his trial before the revolutionary tribunal, where his acquittal gave their enemies a signal and, indeed, fearful triumph. They then struck directly at their principal adversary, and established a Commission of Twelve to examine into the proceedings of the Commune of Paris. That body, thus assailed, lost no time in taking their resolution. The various sections of Paris appeared before the Convention with petitions demanding the abrogation of the Commission and the arrest and accusation of the twenty-two principal deputies of the Girondin party. Tumult and menaces followed. On the interposition of Danton, who wished to avert the last extremities, the Commission was annulled by a vote of the Convention. The next day Lanjuinais, who displayed, in defence of his party, the same intrepidity which he had shown in endeavouring to save the life of the King, carried a motion to rescind this vote. The mob could be no longer restrained — they declared themselves in a state of permanent insurrection. On the 31st of May they surrounded and entered the Convention. The Girondins protesting against this coercion, quitted their seats; their places were occupied by the mob; and the Commission was again annulled. But the excited populace now required vengeance as well as submission. The cry for the accusation of the Twenty-two was again raised. On the morning of the 2d of June the Convention was surrounded by the armed force of the sections under the command of Henriot; and a hundred pieces of artillery were pointed against the chamber which it occupied in the palace of the Tuileries. Some of the proscribed deputies had already sought safety in flight; others, with Vergniaud at their head, calmly proceeded through the threatening mob to brave the fate which was denounced against them. The Committee of Public Safety endeavoured to effect a compromise by inducing the Twenty-two to resign their seats in the Convention. Some did so; others stoutly refused. The menaces of the armed mob increased in violence. As a last expedient to save their colleagues, the Convention, with the president at their head, proceeded in a body to make their way out of the Tuileries. Henriot refused to allow them to pass until they had given up the Twenty-two. At every point they found their passage barred by the insurgent forces; and at length they returned to their chamber, and passed a decree ordering the provisional arrest of the principal leaders of the Girondins.

So closed the political existence of a party which, for nearly two years, had occupied the most conspicuous position in the legislature of their country. Misplaced in a revolution which they were not capable of conducting, they became the victims of those ferocious passions which, after exciting, they had failed in coercing, and with which they scorned to enter into any compromise. A civil war, which at the outset menaced the existence of the Republic, was for some weeks kept alive in Normandy and other parts of France by such members of the party as had escaped from Paris. A majority of the departments joined their cause, and prepared to resist the usurped authority of the Mountain. All of every denomination who were hostile to those in power, crowded under the banner raised by the Girondins. The natural consequence of this was, that the Royalists, who had long been secretly preparing for resistance, and who possessed leaders of military experience, became everywhere the real masters of the movement, and turned it to their own purposes. No sooner was this apparent, than the insurgents lost confidence in one another. The insurrection subsided as instantaneously as it had broken out, except at one or two points, where it was avowedly continued as a Royalist rebellion. In the course of a few weeks the Committee of Public Safety had almost everywhere re-established its authority; and the only resource, which was left the baffled Girondins, was disguise and flight.

These insurrectionary attempts had fearfully excited the passions of the populace and Convention against those of the Girondin leaders who were in their power; and the assassination of Marat sealed their doom. The early history of Charlotte Corday (whom M. de Lamartine states to have been a descendant of the great Corneille), and all the details of her memorable act and heroic death are carefully narrated. Only one moment of compunction came over her — it was on witnessing the grief of Marat's mistress. She had not conceived it possible that, in destroying a monster, she could be wounding the affections of any human being. Our author gives a striking picture of her as she was conveyed to the scaffold, clothed in the red shirt which was reserved for murderers, and inspiring even the ferocious mob with admiration for her beauty and simple courage. Vergniaud, when he heard the details of her fate, exclaimed, 'She kills us, but she teaches us how to die.'

From this period commences the Reign of Terror. The perilous condition of society which followed the 31st of May, 1793, had produced a general sense of the necessity of a vigorous executive; and the Committee of Public Safety, taking

advantage of the opportunity, succeeded in obtaining complete possession of the administration of affairs. Supported by a disciplined force, under the name of the 'Revolutionary Army,' it had in its hands the means of crushing opposition and enforcing obedience. For the first time since the meeting of the States General, France possessed a strong government. To suppress rebellion, repel the foreign foe, and terrify the internal enemies of the Republic, was the first business of that government. For this last purpose the Revolutionary Tribunal was re-organised, and armed with the terrible 'Loi des Suspects.'

The first sufferer was, perhaps, the one whose fate most revolts us by its injustice—the unfortunate Custine, whose military reverses drew on him the penalty of treason. A nobler victim followed. On the 14th of October the unhappy queen was brought before the Revolutionary Tribunal. Her intrepid protest against the foul charges with which Fouquier garnished his list of calumnies, for one moment rallied the feelings of the audience on her side; but could not avert a doom which was meant to be the penalty both of her former greatness and of her recent hostility to the Revolution. She was conveyed to her fate in an open cart, amid the execrations of the mob, and the savage jests of the infuriated women, whose trade it was to insult the dying. The jolting of the rough vehicle disordered her dress, and added to her sufferings by diminishing the air of personal dignity, which she strove to preserve. Her haughty countenance evinced the mortification and anger which filled her soul; and she died exhibiting to the last her hatred and scorn for her butchers. But the touching narrative does not disarm the justice of its historian. After moving our sympathy by her wrongs, he remains master of himself, and calmly proceeds to review the life and condemn the errors of Marie Antoinette.

The Girondin leaders, who, in conformity with the decree of the second of June, had been watched rather than confined in their own houses, and had refused to avail themselves of many opportunities of flight, had, as the public became exasperated by the proceedings of their adherents, been transferred to the prisons. Seventy-three of the less important deputies of the party were also *décretés*, lodged in prison, but saved from death by the energetic protection of Robespierre. M. de Lamartine, who endeavours, somewhat at the expense of historical truth, to represent Robespierre as having endeavoured to save the Queen (for, he had been the first publicly to demand her trial within a few weeks of that of the King), is supported by more authority, when he attributes to him the wish to save the Girondin leaders from the scaffold. Danton undoubtedly had that

object at heart. Both were powerless to resist the rage of their party and the populace. On the 26th of October the trial of the twenty-two Girondins began. Among them were Brissot, Gensonné, Fauchet, Sillery, and several of the most eminent deputies of the party. All eyes, however, were turned on the last who entered the hall. It was Vergniaud, or rather the wreck of that great orator, whose voice had subverted the Monarchy, and disputed the mastery with Robespierre and Danton. His imprisonment had impressed a livid paleness on his cheek, deprived his eye of its fire, and given his person an unhealthy corpulence. He wore the dress in which the spectators recollected to have seen him habitually dressed in the Convention; but the coat, too small for his swollen limbs, had burst in the seams, and completed the picture of physical as well as political decay. Neither eloquence nor innocence could avail with judges, who regarded the whole public life of the accused as one crime. But the government took care to allow no room for either pity or justice. A decree closed the proceedings, without permitting the prisoners to make their defence. They were declared guilty, and sentenced to death.

The famous supper which the prisoners took together that night is minutely described; and M. de Lamartine has apparently converted this part of his history into a romance, for the purpose of clothing in his own eloquent language the sentiments said to have been expressed on that occasion. Then follows the well-known story of the death of the Girondins, as they went to the scaffold, and successively ascended it, singing the 'Marseillaise' in chorus, till the knife had extinguished the last voice that raised the hymn of liberty.

The at once heroic and truly womanly death of Madame Roland followed in a few days. The news of her death reached Roland in Normandy, and was the signal for his own fate. He left the retreat in which he had found safety, and laying himself down by the roadside put an end to himself. Condorcet was concealed by some generous friends in Paris until the following April. There, with his illusions unabated, he composed his work on the 'Perfectibility of the Human Race.' A bright sunny day proved too irresistible a temptation to the captive: he quitted his hiding-place, sallied out into the suburbs, and enjoyed once more the air, and sunshine, and fields. His appearance gave rise to suspicions: he was arrested, and found next morning dead, with the phial of poison which he had swallowed still by his side.

A detailed account is given of the escape of Guadet, Salles, Louvet, Barbaroux, Buzot, and Petion, after the rout of the

Girondin forces in Normandy. Having, amid fearful perils and sufferings, reached Brest, they got a passage to the neighbourhood of Bordeaux, where the friends of Guadet provided them with shelter. Eight months were passed by them, at first in an under-ground vault, and subsequently in the house of a courageous lady. The search for them being then renewed, they separated. Guadet and Salles were taken in the house of the former's father, carried to Bordeaux, and executed. Louvet was saved by his boldness in taking refuge in Paris itself. The others lingered about their former asylum for some weeks, and then endeavoured to make their way to the Pyrenees. Some peasants in a field heard the sound of a pistol, and found the half-dead body of the once handsome Barbaroux. A few days after, in a forest at a little distance, were found some mangled limbs, which the wolves had half devoured, and which the clothes and papers discovered with them showed to be the remains of Buzot and Petion. M. de Lamartine has omitted the date of their death, not the least painful circumstance connected with it. That date was in July 1794, only about three weeks before the fall of Robespierre. Had they contrived to baffle their pursuers for that brief period, they would have been saved.

We have thus followed M. de Lamartine through his narrative: endeavouring to convey to our readers, the story as he tells it, of the period of the Revolution which coincides with that of the existence of the party which forms the ostensible subject of his work. This important epoch occupies altogether six of the eight volumes of M. de Lamartine's history: we regret that the length of our review of it precludes our following him through the remaining two, which continue the narrative to the fall of Robespierre, and are, perhaps, the most interesting portion of the work. The different scenes of the Reign of Terror are successively delineated with wonderful power. The mass of bloodshed and misery,—the batches of from 60 to as many as 150 victims that each day fed the guillotine at Paris,—the courageous resistance of Lyons, and the atrocious butcheries which followed its subjugation,—the cruelties of Lebon at Arras, and the yet more appalling atrocities perpetrated by Carrier at Nantes, are placed vividly before our eyes. Sometimes our attention is directed to the characteristic particulars that distinguished the death of the more remarkable individuals. Now it is Barnave who passes along dejected amid the pity of the people, of whom he was once the idol: now Biron, rising from his wine and oysters to die gaily amid the applauses of the mob: now the wretched Du Barri, screaming 'La 'vie! La vie! pour tous mes repentirs:' now Bailly perishing

with undaunted soul in defiance of the outrages and blows of vindictive ruffians: now the venerable Malesherbes laying down his life with not unseemly gaiety: now the saintly sister of the King exercising her charity towards her fellow-sufferers in her last moments. We sicken at the prodigality with which the life of whole classes is taken away at once. One day, the *cortége* bears along twenty-seven merchants of Sedan: on another, the sixty farmers-general of the revenue: and on another, forty-five magistrates of Paris, together with thirty-three members of the parliament of Toulouse. One morning a long line of carts conveys all the nuns, young and old, of the Abbey of Montmartre. On another are seen a group of girls, of whom the eldest was not above eighteen. They had all been brought up from their native town of Verdun to die for having danced at a ball given to the Prussians.

The most harrowing tale of all is, the destruction of the whole family of the beautiful Madame de Sainte-Amaranthe. In the last days of terror, this family was sacrificed by the colleagues of Robespierre, in order to wound him by their destruction. They were involved in a pretended plot with Cecile Renault, who was accused of attempting to murder him. Eight carts bore to the scaffold sixty-two prisoners, all clad in the red shirt that denoted the crime of murder. Of this number were the porter of the house where L'Admiral had stabbed Collot d'Herbois, and the porter's wife: the crime alleged against them being that they were 'both guilty of not having broken out into sufficient joy when 'the assassin was arrested.' The last of this group was M. de Sartines, who had to wait three quarters of an hour on the scaffold, and see all whom he loved on earth butchered before his eyes.

A very touching narrative is given of the long sufferings of a man, whose name will excite no feelings of sympathy — Égalité, once Duke of Orleans. M. de Lamartine has taken some pains to defend this unhappy prince against the accusations, with which his memory is loaded. It has been his hard fate to be taken for the hidden contriver of all those popular movements, which the imagination of the vulgar loves to attribute to some mysterious plotter. The more light that history throws on the events of the Revolution, the more are all of them accounted for by obvious and sufficient causes; and the more insignificant does the part of the Duke of Orleans appear. He was the victim of constant disfavour and suspicion; and much of his hostility to the Royal Family is to be ascribed rather to their fault than his. His chief, if not only, crime was, the base rather than cruel vote

which he gave for the King's death, in the vain hope of saving his own life.

A singular anecdote is told of the Duc de Chartres, now the King of the French, which can hardly have been published without the warranty of that high personage. Some business having brought him from Dumouriez's army to Paris soon after the massacres of September, Danton sent for him, and informed him that he had heard that he ventured in conversation to speak too freely on that subject. He told him he was too young to judge of such matters, and added: 'For the future be silent. 'Return to the army; do your duty; but do not unnecessarily 'expose your life. You have many years before you. France is 'not suited for a Republic: it has the habits, the wants, and the 'weaknesses of a monarchy. After our storms, it will be brought 'back to that by its vices or its necessities. You will be King! 'Adieu, young man. Remember the prediction of Danton.'

The fall of Danton is clearly detailed and explained. Throughout the whole course of the history he stands out as (what M. de Lamartine calls him) the great statesman of the Revolution. He is the one who, in spite of his coarse manners, his profligacy, and even his terrible crimes, most powerfully excites our interest. M. de Lamartine, however, bears hard upon him in respect of his death. He treats all his memorable sayings and doings, during the period of his imprisonment and trial, as so much straining after theatrical effect. This is a grievous injustice to the most gallant and skilful fight for life made during the Revolution. Danton differed from the other victims of the Reign of Terror in this: that, even when within the grasp of the Revolutionary tribunal, his deeply-rooted influence with the mob gave him a chance of escape and victory. He had something else to do than merely to fall with dignity. He harangued, he bore down his judges by his loud voice and imperious gestures, with a view of exciting a movement in his favour. He was on the point of succeeding. A single friend to direct the actions of the sympathising populace — a little less energy than that exhibited by the Committee of Public Safety — would, by our author's own account, have turned the scale in his favour.

As we have said however, Robespierre is the hero of the work. His conduct and motives at every stage are developed with the greatest pains. The least details of his personal appearance, his dress, his daily habits, have been collected with extraordinary care. The ogre of the Revolution is brought before us in all the simplicity of his private life. We enter into his garret at the joiner Duplay's, and do homage to that honest

poverty which, once a necessity, continued to be his choice after the fortunes of France were at his disposal: we follow him from the stormy debates of the Jacobins or the fearful labours of the Committee of Public Safety to his modest supper with his host's family, when he talked with them of the events of the day, or read aloud from Rousseau or Racine. His only other relaxation was his walk on the Champs Elysées, with no companion but his mastiff, Brount. Occasionally, when an opportunity was afforded for a day's holiday, or when some great oratorical effort required unusual thought, he would wander forth to the haunts of Rousseau, and pass whole hours of reverie amid the woods of Meudon, or Ermenonville. Even he, too, had his hopes of domestic happiness in a quiet future, when, after the completion of the Revolution, he might be united to Eleonore Duplay, and pass the obscure remainder of his life on his few paternal acres in the neighbourhood of Arras.

It is impossible to rise from the perusal of M. de Lamartine's book without a somewhat changed opinion of Robespierre. There is no vindication of his acts. No attempt is made to mitigate our horror at the crimes of which he is reputed guilty; none to justify massacre on the plea of public necessity or righteous zeal. M. de Lamartine's aim is to analyse the motives that actuated Robespierre, as well as determine what was really his share in the atrocities which were perpetrated in his name. Perhaps he does this with some partiality. He has conceived an ideal framework of Robespierre's character, and fills it up by attributing to him particular acts or intentions of clemency, for which he has often little and sometimes no warranty. Still, on the whole, his explanation of this strange character is satisfactory. Historical truth, and a knowledge of human nature, gain by reducing the distorted and exaggerated traits of the monster into the features of a man actuated by the ordinary passions of humanity, gifted with many noble and even amiable qualities, and plunged into eternal infamy by common human weaknesses, tried in fearful times by most extraordinary emergencies.

In order completely to understand M. de Lamartine's estimate of Robespierre, it would be necessary to read his book; but the following passage, at the close of the fifth volume, seems to us to give the best summary of the author's views on a character which most of his readers will hitherto have seen painted only in the darkest colours: —

'There was something of these three elements in the soul of the Convention: a purpose which was true and practically attainable; chimeras, which vanished at the attempt to apply them; fits of rage,

which sought to extort by torture the realisation of an order of things not as yet in the nature of man. Holy hopes, vain Utopias, atrocious means,—such were the elements that composed the social politics of this assembly, placed between two civilisations to exterminate the one, and herald in the other. Robespierre personified these tendencies more than any of his colleagues. His plans, religious in their purpose, chimerical in their details, became sanguinary when they came in collision with practical impossibility. A frenzy of benevolence seized the Utopian; this frenzy of benevolence has the same effects as the frenzy of mischief. Robespierre held to his chimeras as to truths. Had he been more enlightened, he would have been more patient. His anger arose from his delusions. He wished to be the constructor of a social regeneration; society resisted: he took the sword and thought it was permitted to man to make himself the executioner of God. He communicated this spirit, half through fanaticism, half through terror, to the Jacobins, to the people, to the Convention. Hence this contrast of an assembly resting one hand on the revolutionary tribunal and the instrument of death, and with the other writing a constitution which recalled the pastoral Republics of Plato or "Telemachus," and breathed in every page, God, the people, justice, and humanity. Never was so much blood shed on truth. The task of history is to wash out these stains, and not to reject social justice because a deluge of blood has been spilled over the doctrines of liberty, of charity, and of reason.'

The sincere fanaticism of Robespierre was the mainspring of his virtues, his greatness, and his crimes. One high, steady purpose, pursued at every risk, inspired his integrity, his perseverance, and his cruelty. He was at the head of a government assailed by enemies on every side; and he deemed it his duty to uphold that government by striking terror into his adversaries, and disarming opposition. Like all fanatics, he hated his opponents because he thought that the enemies of his righteous cause must be bad men. Still there was in the acts which he sanctioned a prodigality and brutality of cruelty needless for his purpose, fatal to his own views of policy, revolting to the sensitiveness and refinement of his character. We know that such was his own feeling, that he wished to stay the system of terror; that, during the worst period of it, he absented himself from the Committee of Public Safety, and was at direct variance with the 'Comité de Sûreté Générale,' and had no communication with the Public Accuser,—the two authorities by whom the trials and executions were, in fact, entirely regulated; that he denounced Tallien, Collot, Carrier, and especially Fouché, for their abominable cruelties, which he described as 'persecutions of the patriots.' We are the more perplexed to explain how it was that, with despotic power in

his hands, he permitted the horrors which he himself regarded as both mischievous and disgraceful.

The explanation seems to be, that he did not in truth possess the power which opinion ascribed to him. He could not in reality direct the government of which he was at the head. To understand his position we must examine the powers and defects of his mind. He was a logical and systematic thinker, whose system led him into a dreamy enthusiasm. His leading qualification for public life was a singular power of public speaking. In close, clear logic, in dexterous debating, he surpassed every speaker of his day: while in lofty eloquence, some of his speeches were hardly surpassed by the greatest of his rivals. But, like the Girondins, he could do no more than prove his point and make his speech. With the details of public affairs he was utterly unable to grapple. Thoroughly unpractical, he depended on others — first on Danton, afterwards on his colleagues in the Committee of Public Safety, — to determine by what steps their purposes should be carried into effect. Without being justly subject to the imputation of cowardice he was timid in action, or rather averse to act at all. Had the great movements of the Revolution waited for him to produce them, they would never have taken place. He shrank from assailing the Monarchy after the adoption of the Constitution of 1791, and had no desire to see a Republic substituted for it. He kept aloof from the 10th of August, and the 31st of May. So, when at the head of the government, he had little share in the actual organisation of the heroic efforts that saved France. In all cases he left action to others. It was his good fortune that public opinion tended the same way as his, so that the result of its movement, in spite of his inaction, always furthered his purposes. His voyage prospered longer than that of most of his rivals, not from his own good sailing, but because his course happened to lie with the breeze. His ambition was of a patient kind. He loved the applause of his hearers; he took the power which came gradually to him; but he would not precipitate events by grasping it. In his last days the prospect of a Dictatorship did not tempt him. Even the necessities of self-defence could not induce him, on the 9th Thermidor, to ensure a favourable issue to the last movement in his favour, by putting himself at its head. His disposition was to look even then to any but violent means for safety and success; and he easily made up his mind to silent acquiescence in the fate of which a gloomy foreboding had long hung over him.

Such a man was, from his sincerity, his incorruptible character, his great parliamentary powers, the natural head of a republican government, but not its real director and master.

There can be little doubt that he wished to restrain the excesses of his colleagues; but he literally knew not how to set about it. He had not the virtue which was exhibited in the conduct and the favourite device of Vergniaud, — 'Potius mori 'quam fœdari.' He would not peril himself and his cause by inflexibly rejecting the use of atrocious means. He took the system of terror as part of the necessities of the Revolution; and closed his eyes and ears to its excesses just as he closed his shutters in the Rue St. Honoré, while the carts went by to the guillotine. When, at last, events required the cessation of that system,—when he had achieved the first of his dreams, proclaimed the 'Etre Suprême,' re-established religion as the basis of his Republic,—when he was hoping to lay the foundation of a peaceful order of things, he faltered before his better purposes, cast vainly about for the materials and instruments of action, and allowed himself to be surprised and butchered by the most vulgar and sanguinary ruffians of the Revolution. He paid the penalty of his weakness by his death, and in leaving his name loaded with execration, for guilt in which he had participated unwillingly, as well as for crimes which his own fanaticism had prompted.

In thus attempting to make our readers acquainted with the general effect and character of M. de Lamartine's work, we have not ventured to give any extracts from those more striking parts of his narrative, which best exhibit the brilliancy and clearness of his descriptive style. The real merit of these large pictures cannot be estimated from particular portions of them; and as they are the parts of the original work, of which the effect depends the most on the author's mastery of language, they are precisely those to which it is least possible for a translation to do justice. The pictorial power of the narrative constitutes the distinguishing merit of this history. M. de Lamartine has shown that he possesses in an eminent degree one, at least, of the first qualifications of a great historian, namely, the gift of stamping on the reader's mind a living impression both of great transactions and of the men that bore a part in them. Far be it from us to derogate from the merits of those who, by extensive research and correct analysis, ascertain the facts of history and explain the connection of events. It is only by a long series of such inquiries and speculations that the materials of history are duly matured and brought together. But they are not the histories from which mankind takes its impressions of the past. He who would give the world its historical beliefs, must bring to the task the gifts of the poet as well as of the philosopher; must be able to depict incidents as in an epic, and make each

character appear and act with dramatic distinctness and effect. No historian of the Revolution has done this so strikingly as M. de Lamartine; and none, therefore, will in all probability exercise so extensive an influence on the popular views which will be generally entertained of it.

That influence, no question, will be very much diminished by the want, in M. de Lamartine, of other qualities which are required to complete the character of a historian. His work is wanting, not merely in accuracy and research, but in the indications of large, calm, and solid thought. While we think that the author does more than any preceding historian towards giving a reasonable explanation of the events of the Revolution, and while we generally agree in the justice of M. de Lamartine's conclusions and sympathise with his feelings; we feel that he does not express those conclusions in the tone of a philosopher, who has deeply meditated and thoroughly mastered his subject. His narrative exhibits constant marks of exaggeration. The subject, undoubtedly, has a tendency to produce this fault. All the moral phænomena of the Revolution were on a great scale, the vicissitudes unusually rapid, the results vast and overwhelming, the character of men so tried by circumstances as to develope extraordinary manifestations of intellect, of virtue, and of wickedness. But we cannot understand what heightening or transforming powers the Revolution could have possessed over female beauty: when we find, therefore, that hardly a woman appears on the scene, or is even mentioned as the wife or daughter of some distinguished man, but her beauty is represented as having been perfectly wonderful, we cannot but suspect that other pictures may be equally overcharged. The story of the daughters of M. Fernig, who served as soldiers in Dumouriez's army, bearing the fatigues, exposed to the perils, and sharing in the glories of the brilliant campaigns of Valmy and Jemappe, is romantic enough in its simplest outline: M. de Lamartine makes it absolutely ridiculous by investing the young ladies with the physical strength and prowess of Paladins. The same tendency to exaggeration is exhibited in every matter, in which numbers are in question. There is throughout too great a disposition to heighten the effect of the narrative by adopting the largest estimates hazarded by cotemporary writers; and our belief in the melancholy realities of the Revolution is shaken rather than confirmed, by somewhat incredible torrents of blood and heaps of carcasses.

We should be happy to think that what we have taken for indications of a want of sound and sober thought, may be only the consequence of the excessive rapidity, with which the 'History of the Girondins' has been written. It betokens, how-

ever, little wisdom in an author, who writes for fame and not for bread, to have composed a great work on a great subject without giving himself sufficient time for thought. Let us hope that M. de Lamartine will avoid this most deplorable fault in the 'History of the Constituent Assembly,' which he promises us. A gestation of nine years is more essential to a history than even to a poem. We know not whether M. de Lamartine has in him the capacity of being a great historian, but he has so many of the highest qualifications, that there will be few literary mistakes more deeply to be regretted than that he should be found to have sacrificed his chance of usefulness with posterity to the vanity of astonishing his contemporaries by the celerity of his execution and the brightness of his colours.

ART. II.—1. *The Irish Sketch-Book.* By Mr. M. A. TITMARSH. With numerous Engravings on Wood, drawn by the Author. In two volumes. Second edition. London, 1845.

2. *Notes of a Journey from Cornhill to Grand Cairo*, by way of Lisbon, Athens, Constantinople, and Jerusalem. Performed in the Steamers of the Peninsular and Oriental Company. By Mr. M. A. TITMARSH, Author of 'The Irish Sketch-Book,' &c. London, 1846.

3. *Vanity Fair:* Pen and Pencil Sketches of English Society. By W. M. THACKERAY, author of 'The Irish Sketch-Book,' 'Journey from Cornhill to Grand Cairo,' and 'Jeames' 'Diary' and the 'Snob Papers' in Punch, &c. &c. (Nos. I. —XI.)—to be continued.

FAME, like wealth, is very unfairly and unequally distributed in this world. The remark, though hackneyed, ever and anon comes back upon us with a force and vividness affording, to our minds, unanswerable evidence of its truth. It has just been suggested to us anew, on observing within how small a circle the personal reputation of a highly influential writer may be confined, unless he puts forth a regular succession of quartos and octavos, and placards his real name on his title-pages. It may be right and natural that this should be so: anonymous writers have no reason to complain that their names are not familiar in men's mouths; and yet let us not be accused of an undue partiality towards the claims of our own calling when we say, that most of the great battles between truth and prejudice have been decided — most of the great steps in taste, criticism, correct feeling, and social improvement, have been

made,—not by 'authors' in the grand dignified sense of the word, but by periodical essayists, pamphleteers, reviewers, and the calumniated tribe who fall under the large and generic description of 'gentlemen of the press.' Yet invaluable as their services have been and are, these only arrive at celebrity in rare instances,—when their writings are collected towards the end of their career, or when the grave has closed upon them and some admiring friend is looking round for a monument. The political tracts of Swift and the moral essays of Addison have long taken rank among the classics of our tongue; but at the time of their publication men speculated upon them much as they now speculate on an article that attracts attention in a newspaper or a review; the authorship was by turns the subject of bold assertion, rash conjecture, and confidential communication; and it may be doubted whether even the inner circle were aware that the tracts and essays in question were forming a new epoch in literature.

The periodical writers and journalists of France have of late years enjoyed a degree of consideration more commensurate with their real influence and importance, but it is curious to see how French pamphleteers were regarded at no distant period. Paul Louis Courier, who probably had done more for the language than any ten of the existing forty, was rejected with scorn by the Academy, and prosecuted as a *vile pamphleteer* by the government.

'"*Vile pamphleteer.*" This word raising against me the judges, the witnesses, the jury, the audience (my very advocate appeared shaken by it), this word decided all. I was condemned in the minds of these gentlemen from the moment that the king's man had called me *pamphleteer*, to which I knew of no reply. For in my innermost soul it appeared to me that I had produced what is called a pamphlet; I dared not deny it. I was then a pamphleteer according to my own estimate, and seeing the horror which such a name inspired in the whole auditory, I stood confounded.'

Somewhat of the same horror is still inspired in the minds of a large class of English gentlemen by the bare mention of a newspaper writer; and we have known honourable and sensible men (at least, men commonly deemed sensible) act, and avow that they acted, differently from what they intended, because the line of conduct they really considered right had been too warmly advocated in the columns of a leading journal; imitating in this respect that sagacious animal the Irish pig, who, to manifest his perfect independence, makes a point of moving on all occasions in a diametrically opposite direction to the one indicated. When, therefore, we mention the late Mr.

Barnes and the gentleman who lately edited the Examiner as illustrations of our theory,—as men whose general reputation is very far below their real claims and merits, we shall be met probably with vehement protests from many quarters. Few or none, however, will deny that a wide-spread and lasting influence has been exercised through the pages of this review and those of our great Southern contemporary; yet it is only within the last five or six years, and after most of the contributors with whom we started had retired from the arena or sunk full of years and honours to the grave, that the public have become familiar with the names and individual performances of those by whom they had been so long guided, instructed, and amused.

Our honoured and lamented friend, the late Sydney Smith, was fond of telling in detail the story (mentioned in his published letter to Mr. Mackintosh) of his being mistaken at a dinner party at Sir James Mackintosh's for his gallant synonyme the hero of Acre; but we well remember the time,—long after he had become the delight of the most polished and intellectual circles of London and Edinburgh, when it was necessary, among the uninitiated or in the provinces, to preface the repetition of one of his *bons mots* by a sort of biographical notice, and as it were establish the existence of a Rev. Sydney Smith in contradistinction to the Admiral. Yet let any one, capable of estimating such matters, lay his hand upon his heart and declare whether any man living had done more to explode error, discredit bigotry, reform abuses, and diffuse intelligence.

That he has left no standard work of permanent interest and authority (for 'Peter Plymley' has fulfilled its vocation) is little to the point; for it is not by standard works that the results we speak of are best or most frequently brought about. In an unpublished letter from a distinguished prelate of the Irish church (which we are quite sure he will excuse our quoting) it is said: 'There is a large proportion of the public with whom 'repetition does more than anything else; who require to have 'an argument obtruded on their notice many times before they 'can be brought to attend to it, and made familiar to them 'before they fully comprehend it. It is only from the intelligent, candid, and attentive, that an error can be at once pulled 'up by the roots; with the generality, the process must be like 'that of the backwoodsman in extirpating trees, which he first 'fells, and then, year by year, pulls off the shoots as they spring 'up, till the stump dies and decays; after which he pulls it up.' The excellent writer in question performed this backwoodsman's service to admiration; and many a time within the last year or two, stunned or wearied by Currency nonsense and Maynooth

absurdity, have we exclaimed, 'Oh, for one hour of blind old 'Dandolo!' oh, for one hour of 'Peter Plymley,' with his searching clenching ridicule, and masculine good sense.

There is another mode in which periodical writers often benefit mankind, not only without having their services acknowledged, but without even being themselves aware of them. 'It 'is not always necessary (says Goethe) for truth to embody 'itself; enough if it float spiritually about and induce agree-'ment, if, like the deep, friendly sound of a bell, it undulates 'through the air.' Full many a valuable truth has been sent undulating through the air by men who have lived and died unknown: at this moment the rising generation are supplied with the best part of their mental aliment by writers whose names are a dead letter to the mass; and among the most remarkable of these is Michael Angelo Titmarsh, alias William Makepeace Thackeray, author of 'The Irish Sketch Book,' of 'A Journey from Cornhill to Grand Cairo,' of 'Jeames' Diary,' of the 'Snob Papers' in 'Punch,' of 'Vanity Fair,' &c. &c.

Mr. Thackeray is now about thirty-seven years of age, of a good family, and originally intended for the bar. He kept seven or eight terms at Cambridge, but left the University, without taking a degree, with the view of becoming an artist; and we well remember, ten or twelve years ago, finding him day after day engaged in copying pictures in the Louvre in order to qualify himself for his intended profession. It may be doubted, however, whether any degree of assiduity would have enabled him to excel in the money-making branches, for his talent was altogether of the Hogarth kind, and was principally remarkable in the pen and ink sketches of character and situation which he dashed off for the amusement of his friends. At the end of two or three years of desultory application, he gave up the notion of becoming a painter and took to literature. He set up and edited with marked ability a weekly journal, on the plan of the 'Athenæum' and 'Literary 'Gazette,' but was unable to compete successfully with such long-established rivals. He then became a regular man of letters; that is, he wrote for respectable magazines and newspapers, until the attention attracted to his contributions in 'Fraser's 'Magazine' and 'Punch' emboldened him to start on his own account, and risk an independent publication.

These biographical details will be found highly useful in forming a just estimate of Mr. Thackeray's merits and capacity; for much that is most characteristic in his style of expression and mode of looking at things and people, may be traced directly to

his life, and to the peculiar society into which he has naturally and necessarily been thrown by it.

In forming our general estimate of this writer, we wish to be understood as referring principally, if not exclusively, to 'Vanity 'Fair' (a novel in monthly parts), though still unfinished; so immeasurably superior, in our opinion, is this to every other known production of his pen. The great charm of this work is its entire freedom from mannerism and affectation both in style and sentiment, — the confiding frankness with which the reader is addressed, — the thoroughbred carelessness with which the author permits the thoughts and feelings suggested by the situations to flow in their natural channel, as if conscious that nothing mean or unworthy, nothing requiring to be shaded, gilded, or dressed up in company attire, could fall from him. In a word, the book is the work of a gentleman, which is one great merit; and not the work of a fine (or would-be fine) gentleman, which is another. Then, again, he never exhausts, elaborates, or insists too much upon anything; he drops his finest remarks and happiest illustrations as Buckingham dropped his pearls, and leaves them to be picked up and appreciated as chance may bring a discriminating observer to the spot. His effects are uniformly the effects of sound wholesome legitimate art; and we need hardly add that we are never harrowed up with physical horrors of the Eugene Sue school in his writings, or that there are no melodramatic villains to be found in them. One touch of nature makes the whole world kin, and here are touches of nature by the dozen. His pathos (though not so deep as Mr. Dickens') is exquisite; the more so, perhaps, because he seems to struggle against it, and to be half ashamed of being caught in the melting mood: but the attempt to be caustic, satirical, ironical, or philosophical, on such occasions, is uniformly vain; and again and again have we found reason to admire how an originally fine and kind nature remains essentially free from worldliness, and, in the highest pride of intellect, pays homage to the heart.

'Vanity Fair' was certainly meant for a satire: the follies, foibles and weaknesses (if not vices) of the world we live in, were to be shown up in it, and we can hardly be expected to learn philanthropy from the contemplation of them. Yet the author's real creed is evidently expressed in these few short sentences:

> 'The world is a looking-glass, and gives forth to every man the reflection of his own face. Frown at it, and it will in turn look sourly upon you; laugh at it and with it, and it is a jolly kind companion; and so let all young persons take their choice.'

But this theory of life does not lead Mr. Thackeray to the conclusion that virtue is invariably its own reward, nor prevent him from thinking that the relative positions held by great and small, prosperous and unprosperous, in social estimation, might sometimes be advantageously reversed. M. Emile Souvestre, the author of the very remarkable novel entitled 'Riche et 'Pauvre,' has written another novel of striking merit in its way, entitled 'Les Reprouvès.' The intended moral is indicated in a prefatory chapter, where the respectable people and the reprobates (*les reprouvès*) are supposed to be drawn up in the presence of an all-seeing judge;—the respectables, 'all honourable men,' but including the mean, the cold, the unsympathising, the ungenerous, the envious, the hard-hearted, the true self-seekers of this world, who always side with the strongest, get out of the way of a falling friend as eagerly as of a falling house, and define gratitude in their inmost souls as 'a lively sense of favours to 'come;' the reprobates, reckless, thoughtless, improvident, bankrupt in estate and character, but including many who had become so through the dishonesty or injustice of others, the victims of misplaced confidence or ill-requited affection. The judge makes a sign; the breasts of both classes are laid bare; and in the hearts of a large proportion of the respectables is a serpent, in the hearts of a large proportion of the reprobates a star. Take self-sacrifice as the test of virtue, and the moral (though a dangerous one) will not be found so entirely fallacious as it may probably be thought at first. Mr. Thackeray does not altogether adopt it, but he has a hard hit or two at the inequalities of our social order:—

'If mere parsimony would have made a man rich, Sir Pitt Crawley might have become very wealthy—if he had been an attorney in a country town, with no capital but his brains, it is very possible that he would have turned them to good account, and might have achieved for himself a very considerable influence and competency. But he was unluckily endowed with a good name and a large though encumbered estate, both of which went rather to injure than to advance him. He had a taste for law, which cost him many thousands yearly; and being a great deal too clever to be robbed, as he said, by any single agent, allowed his affairs to be mismanaged by a dozen, whom he all equally mistrusted. He was such a sharp landlord, that he could hardly find any but bankrupt tenants; and such a close farmer, as to grudge almost the seed to the ground; whereupon revengeful Nature grudged him the crops which she granted to more liberal husbandmen. He speculated in every possible way; he worked mines; bought canal shares; horsed coaches; took government contracts, and was the busiest man and magistrate of his county. As he would not pay honest agents at his granite-quarry, he had the satisfaction

of finding that four overseers ran away, and took fortunes with them, to America. For want of proper precautions, his coal-mines filled with water: the government flung his contract of damaged beef upon his hands: and for his coach-horses, every mail proprietor in the kingdom knew that he lost more horses than any man in the country, from under-feeding and buying cheap. In disposition he was sociable, and far from being proud; nay, he rather preferred the society of a farmer or a horse-dealer to that of a gentleman, like my Lord, his son: he was fond of drink, of swearing, of joking with the farmers' daughters: he was never known to give away a shilling or to do a good action, but was of a pleasant, sly, laughing mood, and would cut his joke and drink his glass with a tenant, and sell him up the next day; or have his laugh with the poacher he was transporting with equal good humour. His politeness for the fair sex has already been hinted at by Miss Rebecca Sharp — in a word, the whole baronetage, peerage, commonage of England, did not contain a more cunning, mean, selfish, foolish, disreputable old man. That blood-red hand of Sir Pitt Crawley's would be in anybody's pocket except his own; and it is with grief and pain, that, as admirers of the British aristocracy, we find ourselves obliged to admit the existence of so many ill qualities in a person whose name is in Debrett.

'One great cause why Mr. Crawley had such a hold over the affections of his father resulted from money arrangements. The Baronet owed his son a sum of money out of the jointure of his mother, which he did not find it convenient to pay; indeed he had an almost invincible repugnance to paying anybody, and could only be brought by force to discharge his debts. Miss Sharp calculated (for she became, as we shall hear speedily, inducted into most of the secrets of the family) that the mere payment of his creditors cost the honourable baronet several hundreds yearly; but this was a delight he could not forego; he had a savage pleasure in making the poor wretches wait, and in shifting from court to court and from term to term the period of satisfaction. What's the good of being in parliament, he said, if you must pay your debts? Hence, indeed, his position as a senator was not a little useful to him.

'Vanity Fair! Vanity Fair! Here was a man who could not spell, and did not care to read; who had the habits and the cunning of a boor; whose aim in life was pettifogging; who never had a taste, or emotion, or enjoyment, but what was sordid and foul; and yet he had rank, and honours, and power, somehow; and was a dignitary of the land and a pillar of the state. He was high sheriff, and rode in a golden coach. Great ministers and statesmen courted him; and in Vanity Fair he had a higher place than the most brilliant genius or spotless virtue.'

Still the balance is fairly held. There are good people of quality as well as bad in his pages, — pretty much as we find them in the world; and the work is certainly not written with the view of proving the want of re-organisation in society, nor indeed of proving any thing else, which to us is a great relief.

Mrs. Opie and Miss Edgeworth went quite far enough, when they made the illustration of some one particular rule or precept the main object of their stories, as in 'White Lies,' 'Murad the Unlucky,' &c. &c. Miss Martineau went a great deal too far when she made the inculcation of a doubtful (or at least disputed) doctrine in political economy the main object of *hers;* for in all such cases the question must be begged, and it is obviously just as easy to sketch a ploughman's family thrown out of employ through the abolition of the corn laws, as a weaver's or cotton-spinner's reduced to the verge of starvation by the enactment of them. In fact, the mixture spoils two good things, as Charles Lamb (Elia) used to say of brandy and water; and we heartily rejoice that Mr. Thackeray has kept his science and political economy (if he has any) for some other emergency, and given us a plain old-fashioned love-story, which any genuine novel reader of the old school may honestly, plentifully, and conscientiously cry over.

We fear a novel reader must be literally of the old school to enter fully into the humour of the work; for the scene is laid when George the Fourth was (not king, but) regent; the most stirring period is the Waterloo year, 1815; and the dress, manner, modes of thought, amusements, &c. &c. are supposed to be in keeping. The war fever was at its height: Napoleon was regarded as an actual monster: the belief that one Englishman could beat two Frenchmen, and ought to do it whenever he had an opportunity, was universal, (perhaps beneficially so, for 'those 'can conquer who believe they can'): the stage coach was the only mode of travelling for the commonalty: gentlemen occasionally attended prize-fights: top-boots and hessians were the common wear: black neckcloths were confined to the military; and tight integuments for the nether man were held indispensable; so much so, indeed, that when some rash innovators attempted to introduce trousers at Almack's, the indignant patronesses instantly posted up a notification, that, 'in future, no gentleman 'would on any account be admitted without breeches.'*

The *dramatis personæ* are not so easily described or enumerated; and the plot is less an object of attention than the episodes. We fear, however, that we cannot calculate on general familiarity with the story, and must attempt an outline of it.

Scene the first: Miss Pemberton's academy for young ladies on Chiswick Mall. Two pupils are just leaving it in company:

* This fact, curiously enough, is forgotten in the woodcuts, old Sedley, Mr. Chopper, Rawdon Crawley, &c. &c., being represented in trousers.

Amelia Sedley, the daughter of a prosperous stockbroker, who lives in Russell Square and keeps his carriage; and Rebecca Sharp, an articled pupil, who has served her time and (after a short visit to the Sedleys) is about to take upon herself the responsible duty of governess in a family of distinction. These are the heroines, and share the main interest of the tale so equally, that, if more than one heroine is, critically speaking, inadmissible, they must be considered as discharging the duties of the office in co-partnership, like the two sheriffs of London, who, in the eye of the law, constitute but one sheriff. Amelia is a gentle, amiable, sweet-tempered girl, who cannot be better described than in the oft-quoted lines of Wordsworth —

> 'A creature not too bright or good
> For human nature's daily food;
> For transient sorrows, simple wiles,
> Praise, blame, love, kisses, tears, and smiles.'

Rebecca is of a totally different character, and the writer has exhibited no small knowledge of the world, combined with considerable artistical skill, in conceiving and developing it. The daughter of a poor artist and a French *artiste*, (whom she mentions in after life as an *emigrée* Montmorency,) Rebecca has her way to win against a host of disadvantages; and apparently no great amount of personal advantages to set against them. She has simply good hair, a clear complexion, figure neat though small, and eyes expressive though greenish; but she has that which amply compensates for the want of more decided attractions, — an intuitive perception of the multifarious manifestations and workings of that master passion or weakness of the human heart and mind, vanity; she has temper when she wants it; and she has in perfection what, perhaps, comprises or implies every other requisite to social conquest, that fine nameless quality called tact.

All travellers in the East are agreed that a certain air of conscious importance is indispensable; the Orientals, they tell us, have no notion that it can be worth their while to respect any one who does not respect himself; and if a pacha with two tails does you the honour of a visit, you ought to demean yourself as if you were a pacha with three. But did it never strike these clever speculators, that precisely the same principle of human action is at work among large numbers of our countrymen? or did they ever know a really good position in English society obtained, or maintained, by crouching? On the contrary, Van Amburgh's safety among the lions and tigers of his menagerie, did not more certainly depend on his showing no sign of

fear, than the position of a new man or woman among the lions and tigers of the great world of London depends on his or her fearlessly confronting them. Rebecca sees this, and acts upon it; nor is it possible to help following her brave but somewhat unprincipled career with a certain degree of sympathy.

She subdues every one: the stingy, litigious, disreputable, old baronet; the stiff, starched, methodical, methodistical, elder son; the bold, blustering dragoon; the old beau; the young dandy, &c.; but before going further into particulars, we must name the principal characters of the novel. There are, first, Amelia's father, mother, and brother, all highly finished pictures in their way, though we do not think John Sedley (the brother) should have been made to take flight at Brussels, leaving his sister in the lurch; then, Amelia's lover, and afterwards husband, George Osborne, with *his* father (the rich tallow merchant) and sisters; then the Crawley family, including Sir Pitt and Lady Crawley, the eldest son Pitt, the younger, Rawden, in the Life Guards; the two hoyden daughters, to whom Rebecca plays governess for a period; the parson brother, the Reverend Bute Crawley, and his wife; and the half-sister, Miss Crawley, with her rather free opinions and seventy thousand pounds in the three per cents. Nor must William Dobbin be forgotten, or classed with the minor personages of the tale, which would be as imperfect without him, as 'Roderic Random' without Strap, or 'Tom 'Jones' without Partridge.

The main plot is soon told, so far as it has been developed. George Osborne and Amelia Sedley have been always intended for each other; and Amelia is devotedly attached to George, who, though flattered by her attachment, is very far from returning it with equal ardour; and, indeed, is one of those common characters, in whom what they call love is little better than gratified vanity at the best. The precise relation in which these young people stand to one another will be best illustrated by a quotation.

Captain Dobbin has just been pointing out to George the propriety of his being a little more attentive: —

'The day after the little conversation at Chatham barracks, young Osborne, to show that he would be as good as his word, prepared to go to town, thereby incurring Captain Dobbin's applause. "I should have liked to make her a little present," Osborne said to his friend in confidence, "only I am quite out of cash until my father tips up." But Dobbin would not allow this good nature and generosity to be balked, and so accommodated Mr. Osborne with a few pound notes, which the latter took, after a little faint scruple.

'And I dare say he would have bought something very handsome for

Amelia, only, getting off the coach in Fleet Street, he was attracted by a handsome shirt-pin in a jeweller's window, which he could not resist; and having paid for that, had very little money to spare for indulging in any further exercise of kindness. Never mind: you may be sure it was not his presents Amelia wanted. When he came to Russell Square her face lighted up as if he had been sunshine. The little cares, fears, tears, timid misgivings, sleepless fancies of I don't know how many days and nights, were forgotten, under one moment's influence of that familiar, irresistible smile. He beamed on her from the drawing-room door — magnificent, with ambrosial whiskers, like a god. Sambo, whose face as he announced Captain Osbin (having conferred a brevet rank on that young officer) blazed with a sympathetic grin, saw the little girl start, and flush, and jump up from her watching-place in the window; and Sambo retreated: and as soon as the door was shut, she went fluttering to Lieutenant George Osborne's heart as if it was the only natural home for her to nestle in. Oh, thou poor panting little soul! The very finest tree in the whole forest, with the straightest stem, and the strongest arms, and the thickest foliage, wherein you choose to build and coo, may be marked, for what you know, and may be down with a crash ere long. What an old, old simile that is, between man and timber!

'In the meanwhile, George kissed her very kindly on her forehead and glistening eyes, and was very gracious and good; and she thought his diamond shirt-pin (which she had not known him to wear before) the prettiest ornament ever seen.

'The observant reader, who has marked our young Lieutenant's previous behaviour, and has preserved our report of the brief conversation which he has just had with Captain Dobbin, has possibly come to certain conclusions regarding the character of Mr. Osborne. Some cynical Frenchman has said that there are two parties to a love-transaction: the one who loves, and the other who condescends to be so treated. Perhaps the love is occasionally on the man's side: perhaps on the lady's. Perhaps some infatuated swain has ere this mistaken insensibility for modesty, dulness for maiden-reserve, mere vacuity for sweet bashfulness, and a goose, in a word, for a swan. Perhaps some beloved female subscriber has arrayed an ass in the splendour and glory of her imagination; admired his dulness as manly simplicity; worshipped his selfishness as manly superiority; treated his stupidity as majestic gravity, and used him as the brilliant fairy Titania did a certain carpenter of Athens. I think I have seen such comedies of errors going on in the world. But this is certain, that Amelia believed her lover to be one of the most gallant and brilliant men in the empire: and it is possible Lieutenant Osborne thought so too.'

The bankruptcy of Mr. Sedley brings matters to a crisis, and George marries Amelia, as much on account of his father's opposition as from any feeling of affection or generosity; and here, as in the whole management of this character, the author has shown an intimate acquaintance with the heart. The father

forthwith proceeds to the disinheriting of George. The scene of the ceremony is thus described:—

'Behind Mr. Osborne's dining-room was the usual apartment, which went in his house by the name of the study; and was sacred to the master of the house. Hither Mr. Osborne would retire of a Sunday forenoon, when not minded to go to church; and here pass the morning in his crimson leather chair, reading the paper. A couple of glazed book-cases were here, containing standard works in stout gilt bindings. The "Annual Register," the "Gentleman's Magazine," "Blair's Sermons," and "Hume and Smollett." From year's end to year's end he never took one of these volumes from the shelf; but there was no member of the family that would dare for his life to touch one of the books, except upon those rare Sunday evenings when there was no dinner party, and when the great scarlet Bible and Prayer-Book were taken out from the corner where they stood beside his copy of the Peerage, and the servants being rung up to the dining parlour, Osborne read the evening service to his family in a loud, grating, pompous voice. No member of the household, child or domestic, ever entered that room without a certain terror. Here he checked the housekeeper's accounts, and overhauled the butler's cellar-book. Hence he could command, across the clean gravel courtyard, the back entrance of the stables, with which one of his bells communicated, and into this yard the coachman issued from his premises as into a dock, and Osborne swore at him from the study window. Four times a year Miss Wirt entered this apartment to get her salary; and his daughters to receive their quarterly allowance. George, as a boy, had been horsewhipped in this room many times; his mother sitting sick on the stair listening to the cuts of the whip. The boy was scarcely ever known to cry under the punishment; the poor woman used to fondle and kiss him secretly, and give him money to soothe him when he came out.'

With two thousand pounds for his fortune, and habits of unrestrained self-indulgence, George rejoins his regiment at Brussels, and carries his pretty wife with him. Rebecca, the rival heroine, is also there as Mrs. Rawdon Crawley, the wife of Sir Pitt's younger son, now acting aide-de-camp to General Tufto, a middle-aged lady-killer in love with the piquante ex-governess. The period is an anxious and eventful one,—the fortnight or three weeks preceding the battle of Waterloo; and the life of Brussels is admirably employed to bring the various peculiarities of the principal personages into play. Seasons of danger are seasons of high excitement: both mind and body are kept in a constant state of feverish agitation; and, in the uncertainty as to what is to happen next, every passing pleasure is eagerly caught at and enjoyed with an additional zest. The butterfly population of Paris was gossipping, flirting, smoking cigars, and taking ices on the Boulevards, when the cannon were

thundering from Mont-martre; and the booths of 'Vanity Fair' were never laid out with more tempting profusion, or more eagerly frequented, than in the Belgian capital on the eve of an event which was to alter the history of the world:—

'The sight of the very great company of lords and ladies, and fashionable persons who thronged the town and appeared in every public place, filled George's truly British soul with intense delight. They flung off that happy frigidity and insolence of demeanour which occasionally characterises the great at home, and appearing in numberless public places, condescended to mingle with the rest of the company whom they met there. One night at a party given by the general of the division to which George's regiment belonged, he had the honour of dancing with Lady Blanche Thistlewood, Lord Bareacres' daughter; he bustled for ices and refreshments for the two noble ladies; he pushed and squeezed for Lady Bareacres' carriage; he bragged about the Countess when he got home, in a way which his own father could not have surpassed. He called upon the ladies the next day; he rode by their side in the Park; he asked their party to a great dinner at a restaurateur's, and was quite wild with exultation when they agreed to come. Old Bareacres, who had not much pride and a large appetite, would go for a dinner anywhere.

'"I hope there will be no women beside our own party," Lady Bareacres said, after reflecting upon the invitation which had been made, and accepted with too much precipitancy.

'"Gracious heaven, Mamma—you don't suppose the man would bring his wife," shrieked Lady Blanche, who had been languishing in George's arms in the newly-imported waltz for hours the night before. "The men are bearable, but their women—"

'"Wife, just married, dev'lish pretty woman, I hear," the old Earl said.

'"Well, my dear Blanche," said the mother, "I suppose as Papa wants to go, we must go: but we needn't know them in England, you know." And so, determined to cut their new acquaintance in Bond Street, these great folks went to eat his dinner at Brussels, and, condescending to make him pay for their pleasure, showed their dignity by making his wife uncomfortable, and carefully excluding her from the conversation. This is a species of dignity in which the high-bred British female reigns supreme.'

Not the high-bred British female, but the *soi-disante* leader of fashion; an individual of a genus which is daily becoming rarer and rarer, though we fear that so long as man is man (or woman woman) there will be an occasional indulgence in exclusiveness; nor can Mr. Thackeray be ignorant, that precisely the same description of superciliousness may be observed in the demeanour of Mrs. Alderman Dobson to Mrs. Deputy Tibbs, as in that of the Countess of Bareacres to Mrs. George Osborne.

'There was a sound of revelry by night,
And Belgium's capital had gather'd there
Her beauty and her chivalry; and bright
The lamps shone o'er fair women and brave men:
* * * * *
But hush! hark! a deep sound strikes like a rising knell.'

It was the sound of the cannon at Ligny and Quatre Bras, and among those it summoned to the field (of glory for both, and death for one) were Captain George Osborne and Captain Rawdon Crawley, leaving their respective wives in characteristic attitudes and occupations; poor Amelia powerless and almost motionless with grief, — Rebecca collecting and turning all her moveable property into cash, and making every other fitting preparation for a retreat. George is killed; Rawdon survives, and becomes (through a mistake of the author, in confounding the Life Guards with *the* Guards,) Captain and Lieutenant-colonel and C. B. Amelia goes back to England to live, in poverty and retirement, entirely devoted to her boy. Rebecca continues her career of vanity and dissipation, first in Paris, and then in London, living in each of these luxurious capitals luxuriously on nothing a year: 'the word *nothing* (as 'Mr. T. explains) being used to signify something unknown; 'meaning, simply, that we don't know how the gentleman in 'question defrays the expenses of his establishment.' In the case of Rebecca and her spouse, their pocket-money is won at billiards, écarté, or piquet, by the colonel; the lady's gowns, shawls, bonnets, lace, and *bijouterie* are presents from elderly adorers, who do her the honour of passing their evenings in her pretty drawing-room in Curzon Street; and as for the butcher's, baker's, and greengrocer's bills, they stand on the same footing as the house-rent, and are never paid at all. All hope of getting any part of the maiden-aunt's fortune has long been over, and we do not well see how this interesting couple are to be rescued from the ruin and disgrace impending over them at the end of the 11th (the November) Number, which comprises the latest intelligence that can well reach us prior to the conclusion of this article. Mr. Thackeray, however, has clearly a lurking kindness for both of them, and Rawdon's affection for his boy (one of the finest touches in the story) has gained him many friends, who would be sorry to see him remanded by the Insolvent Court.

When the first part of *Clarissa* appeared, the winding up of the plot was left in doubt, and letter after letter poured in upon Richardson, imploring him to avert the worst portion of the catastrophe. Nor did the heroine monopolise the entire sympathies of the enlightened public of those days, for we find one

female correspondent eager for the conversion of Lovelace, and intreating Richardson to 'save his soul;' as if (adds Sir Walter Scott) there had been actually a living sinner in the case, and his future state had literally depended on the decision to be pronounced by her admired author. We will not ask Mr. Thackeray to save Rawdon Crawley's soul, but we should be glad if he could save his body from the bailiffs, and appoint him to a consulship on the coast of Africa or South America; where Mrs. Rawdon would be sufficiently punished, by having no elderly generals or profligate peers to flirt with and no tradesmen or hotel-keepers to cheat. As regards Mrs. George Osborne, no intercession is needed; the precise lot we should have selected being obviously in store for her. She is to marry Major (or it may be Lieutenant-general, Sir William,) Dobbin; and we are happy to see, from the concluding sentences of the November Number that she is not likely to prove insensible to the happiness in store for her:—

'One day they kindly came over to Amelia with news which they were *sure* would delight her — something *very* interesting about their dear William.

'"What was it: was he coming home?" she asked with pleasure beaming in her eyes.

'"Oh, no — not the least — but they had very good reason to believe that dear William was about to be married — and to a relation of a very dear friend of Amelia's — to Miss Glorvina O'Dowd, Sir Michael O'Dowd's sister, who had gone out to join Lady O'Dowd at Madras — a very beautiful and accomplished girl, everybody said."

'Amelia said "Oh!" Amelia was very *very* happy indeed. But she supposed Glorvina could not be like her old acquaintance, who was most kind — but — but she was very happy indeed. And by some impulse, of which I cannot explain the meaning, she took George in her arms and kissed him with an extraordinary tenderness. Her eyes were quite moist when she put the child down; and she scarcely spoke a word during the whole of the drive — though she was so very happy indeed.'

The interest, however, is too much divided to be deep; and what strikes us most in the conduct of the narrative is, the apparent ease with which such a number and variety of characters are brought upon the stage without crossing or jostling. Numerous, too, and varied as they are, almost every one of them is obviously a copy from the life; whether it be the merchant indorsing his son's letters from school; the old military fribble penning a *poulet* to the opera dancer; the jolly sporting parson receiving a curtain lecture from his wife; Mrs. Major O'Dowd packing her husband's best épaulettes in the tea-canister; or 'the

'Tutbury Pet and the Rottingdean Fibber, with three other gen-'tlemen of their acquaintance,' who suddenly appeared on the cliff at Brighton to the confusion of poor James Crawley, 'in a tax-'cart, drawn by a bang-up pony, dressed in white flannel coats 'with mother-of-pearl buttons.' Mr. Thackeray's familiarity with foreign manners and modes of thinking, adds greatly to the reader's confidence; and we believe lady readers are pretty generally agreed that he has penetrated farther below the surface of their hearts than any other male writer; with perhaps the exception of Balzac, whose knowledge is confined to French women. Yet, though uniformly disposed to exalt the good qualities, he never glosses over the weaknesses, of the sex. A very useful hint may be taken, and we hope in good part, from this passage:

'Has the beloved reader, in his experience of society, never heard similar remarks by good-natured female friends — who always wonder what you *can* see in Miss Smith that is so fascinating; or what *could* induce Major Jones to propose for that silly insignificant simpering Miss Thompson, who has nothing but her wax-doll face to recommend her? What is there in a pair of pink cheeks and blue eyes forsooth? these dear Moralists ask, and hint wisely that the gifts of genius, the accomplishments of the mind, the mastery of Mangnall's Questions, and a lady-like knowledge of botany and geology, the gift of making poetry, the power of rattling sonatas in the Herz-manner, and so forth, are far more valuable endowments for a female, than those fugitive charms which a few years will inevitably tarnish. It is quite edifying to hear women speculate upon the worthlessness and the duration of beauty.

'But though virtue is a much finer thing, and those hapless creatures who suffer under the misfortune of good looks ought to be continually put in mind of the fate which awaits them; and though, very likely, the heroic female character which ladies admire is a more glorious and beautiful object than the kind, fresh, smiling, artless, tender little domestic goddess, whom men are inclined to worship — yet the latter and inferior sort of women must have this consolation — that the men *do* admire them after all; and that, in spite of all our kind friends' warnings and protests, we go on in our desperate error and folly, and shall to the end of the chapter. Indeed, for my own part, though I have been repeatedly told by persons for whom I have the greatest respect, that Miss Brown is an insignificant chit, and Mrs. White has nothing but her *petit minois chiffonné*, and Mrs. Black has not a word to say for herself, yet I know that I have had the most delightful conversations with Mrs. Black (of course, my dear Madam, they are inviolable): I see all the men in a cluster round Mrs. White's chair: all the young fellows battling to dance with Miss Brown: and so I am tempted to think that to be despised by her sex is a very great compliment to a woman.'

Better, and in a much higher vein, is the scene in which Amelia takes leave of Dobbin:—

'"I am come to say good-bye, Amelia," said he, taking her slender little white hand gently.

'"Good-bye? and where are you going?" she said, with a smile.

'"Send the letters to the agents," he said; "they will forward them; for you will write to me, won't you? I shall be away a long time."

'"I'll write to you about Georgy," she said. "Dear William, how good you have been to him and to me. Look at him! Isn't he like an angel?"

'The little pink hands of the child closed mechanically round the honest soldier's finger, and Amelia looked up in his face with bright maternal pleasure. The cruellest looks could not have wounded him more than that glance of hopeless kindness. He bent over the child and mother. He could not speak for a moment. And it was with all his strength that he could force himself to say a God bless you. "God bless you," said Amelia, and held up her face and kissed him.

'"Hush! Don't wake Georgy!" she added, as William Dobbin went to the door with heavy steps. She did not hear the noise of his cab-wheels as he drove away: she was looking at the child, who was laughing in his sleep.'

Fine reflections, compressed into short sentences, abound; for example,—

'Oh these women! they nurse and cuddle their presentiments, and make darlings of their ugliest thoughts, as they do of their deformed children.'

Mr. Dickens stands as completely alone and unrivalled in the power of seizing the physiognomy of a place, as Mr. Edwin Landseer in that of seizing the physiognomy of a dog. Good, therefore, as Mr. Thackeray's sketches of localities are, we will not run the remotest risk of provoking comparisons by quoting from them; but we must give one example of the melancholy, half-sentimental bitterness which so strongly characterises all the productions of his pen:

'Perhaps in Vanity Fair there are no better satires than letters. Take a bundle of your dear friend's of ten years back — your dear friend whom you hate now. Look at a file of your sister's: how you clung to each other till you quarrelled about the twenty pound legacy! Get down the round-hand scrawls of your son who has half broken your heart with selfish undutifulness since; or a parcel of your own, breathing endless ardour and love eternal, which were sent back by your mistress when she married the Nabob — your mistress for whom you now care no more than for Queen Elizabeth. Vows, love promises, confidences, gratitude, how queerly they read after a while! There ought to be a law in Vanity Fair ordering the destruction of

every written document (except receipted tradesmen's bills) after a certain brief and proper interval. Those quacks and misanthropes who advertise indelible Japan ink, should be made to perish along with their wicked discoveries. The best ink for Vanity Fair use would be one that faded utterly in a couple of days, and left the paper clean and blank, so that you might write on it to somebody else.'

It is hardly a reflection on a writer whose originality is indisputable, to say that two or three of his characters bear a partial resemblance to two or three master pieces of his greatest predecessors; and we cannot help thinking that Amelia, the wife of the careless vain spendthrift Captain Osborn, must be a near relation, first cousin at the farthest, of Amelia, the wife of our old acquaintance, the equally careless though not quite so vain spendthrift, Captain Booth; while Dobbin, though already a major and in a fair way to become a general and G. C. B., bears (as already intimated) some affinity to the ex-schoolmaster Partridge, and a very close one to the ex-barber Strap. The unconscious imitation into which the author has dropped in these instances, has in no respect impaired the truth of his delineations; for Amelias and Dobbins, Partridges and Straps, belong to all ages and are completely independent of conventionalities; but much of Sir Pitt Crawley's language is far better fitted for Squire Western and Parson Trulliber, who suggested it, than for a Baronet of ancient lineage, who had sat in parliament for a family borough during the first fifteen years of the present century.

We have said, with reference to 'Vanity Fair,' that Mr. Thackeray never exhausts, elaborates, or insists too much upon anything; but we cannot repeat the compliment with reference to 'The Snob Papers,' in 'Punch.' The original notion of these was not a bad one, but it is literally worked thread-bare; and the author appears at last to have lost sight entirely of the true meaning of the term. According to him, every man who does a mean or dirty action (for example, an earl who haggles with or cheats a tradesman) is a *snob*. To give a precise definition of the word would puzzle the best of living etymologists; but we may safely say, that, in popular acceptation — the *jus et norma loquendi* — it implies both pretension and vulgarity. We include, of course, vulgarity of sentiment; and we admit that a loud, insolent, blustering, overbearing leader of fashion, or a cringing, mean-spirited follower, though rich, well-born, well-dressed and titled, may be a snob. But in speculating on the mixed and singularly constituted society of London, especial care should be taken not to confound in one common censure

the legitimate success of cultivation and refinement, and the spurious triumphs of sycophancy. There really is no denying that the best society is emphatically the best: it is a laudable object of ambition to be received on a footing of equality in circles comprising most of the leading statesmen, artists and men of letters, as well as the beauties and fine gentlemen of the day: and if Miss B. or Lady C. sends Mr. D. a card for her evening parties, we submit, with all due deference to Mr. Thackeray, that he is not at once to be set down as a snob for accepting it, nor even for talking a little the day after of the distinguished persons whose acquaintance he may have made. In the 'Snob Papers' it seems taken for granted that any association between persons of unequal rank, or any mention of a man or woman of rank by a plebeian, implies degradation or meanness of some sort. It was the sagacious remark of Swift, that very nice persons must have very nasty ideas; and (if Mr. Thackeray had not amply redeemed himself from the suspicion by the uniform tone of 'Vanity Fair') we should be apt to suspect, upon the same principle, that those who are so extremely anxious to bring in others guilty of snobbishness must be snobs.

We have another fault to find with his minor works, particularly discernible in that clever and amusing production of his entitled 'Mrs. Perkins' Ball.' Why are the middle classes to be satirised if they venture to give parties without the means and appliances of wealth? Why are young ladies and gentlemen to be prevented dancing except to Weippert's music, or supping except under Mr. Gunter's presidency? Or what is there laughable in the necessity under which a ball-giver, in a house of limited dimensions, finds herself of taking down a bed to form a card-room, or making a passage or closet do duty as a *boudoir*?

> 'Nil habet infelix paupertas durius in se
> Quam quod *ridiculos* homines facit.'

This is only too true; but we fairly own it is a kind of fun we could never relish. When Balzac describes the poor student, unable to raise a franc for a cab, picking his way along the pavement towards the house where he is to meet his lady-love, till his visit is rendered impossible, and all his hopes are blighted for ever, by a splash,—we sympathise with him, instead of laughing at him; and the petty miseries entailed on the Perkins' family by their hospitality and good-nature, were fraught, to us, with more melancholy than mirth. The worst of setting up for a satirist is, that when food for satire is no longer to be

found in sufficient quantity, it must be manufactured, or discovered by dint of a minute scrutiny into the allowable shifts and pardonable weaknesses of mankind or womankind.

A sturdy, untravelled friend of ours once startled a circle composed principally of Oriental travellers, who had been taking the lion's share of the conversation, by suddenly exclaiming, in a tone of deep conviction, that the East was a humbug. Mr. Thackeray's 'Journey from Cornhill to Cairo in the steamers of 'the Peninsular and Oriental Company,' must have been written for the express purpose of establishing this great fact; *e.g.*:

'The palace of the seraglio, the cloister with marble pillars, the hall of the ambassadors, the impenetrable gate guarded by eunuchs and ichoglans, has a romantic look in print; but not so in reality. Most of the marble is wood, almost all the gilding is faded, the guards are shabby, the foolish perspectives painted on the walls are half cracked off. *The place looks like Vauxhall in the day time.*'

He tells us that he actually saw a Turkish lady drive up to Sultan Achmet's mosque in a *Brougham*, and felt, on seeing her, that the schoolmaster was really abroad. The first impression of the East, he admits, is pleasingly redolent of Arabian Nights associations, but there is no necessity for penetrating into the interior to revel in them: —

'There lay the town (Smyrna) with minarets and cypresses, domes and castles; great guns were firing off, and the blood-red flag of the Sultan flaring over the fort ever since sunrise; woods and mountains came down to the gulf's edge, and as you looked at them with the telescope, there peeped out of the general mass a score of pleasant episodes of Eastern life: there were cottages with quaint roofs; silent cool kiosks, where the chief of the eunuchs brings down the ladies of the harem. I saw Hassan, the fisherman, getting his nets; and Ali Baba going off with his donkey to the great forest for wood. . . . A man only sees the miracle once; though you yearn after it ever so, it wo'nt come again. I saw nothing of Ali Baba and Hassan the next time we came to Smyrna, and had some doubts (recollecting the badness of the inn) about landing at all. A person who wishes to understand France and the East should come out in a yacht to Calais or Smyrna, land for two hours, and never afterwards go back again.'

This is a dangerous kind of observer for the Celts of the Green Island; and 'The Irish Sketch-Book' is not a whit inferior to 'Paddiana,' in sketches, anecdotes, and traits of character, illustrative of the peculiarities of the race. We put aside for the moment the all-important question whether the Celtish part of the population of Ireland, the finest *pisantry* in Europe, have been made idle and improvident by bad government, or can be made industrious and provident by good. That most of their

present misery results from their idleness and improvidence, may be placed beyond the possibility of a doubt. We ask with Mr. Thackeray —

'Is the landlord's absence the reason why the house is filthy, and Biddy lolls in the porch all day? Upon my word, I have heard people talk as if, when Pat's thatch was blown off, the landlord ought to fetch the straw and the ladder, and mend it himself. People need not be dirty, if they are ever so idle; if they are ever so poor, pigs and men need not live together. Half an hour's work, and digging a trench, might remove that filthy dunghill from that filthy window. The smoke might as well come out of the chimney as the door. *Why should not Tim do that, instead of walking a hundred and sixty miles to a race?*'

The author declares that he had the honour of seeing only three landlords of inns during the whole of his progress. 'I 'believe these gentlemen commonly, and very naturally, prefer 'riding with the hounds, or manly sports, to attendance on their 'guests; and the landladies, if they prefer to play the piano, or 'to have a game of cards in the parlour, only show a taste at 'which no one can wonder; for who can expect a lady to be 'troubling herself with vulgar chance-customers, or looking 'after Molly in the bedroom, or waiter Tim in the cellar?' So Molly, when coals are called for, brings them up in a *china plate;* Tim runs up to answer Mr. Titmarsh's demand for currant jelly with his venison — 'Sir, there's no jelly, but I've 'brought you some very fine *lobster sauce;*' and when the luggage on the public car is shaken loose and sent tumbling about the ears or against the shins of the passengers through bad packing, it has to be put in order by an English bagman (a passenger), whilst the driver stands by grinning, with his hands in his pocket, and a short pipe between his teeth! The provincial tradesmen are just as bad:

'I went (at Limerick) to buy some of the pretty Limerick gloves (they are chiefly made, as I have since discovered, at Cork). I think the man who sold them had a patent from the Queen, or his Excellency, or both, in his window; but, seeing a friend pass just as I entered the shop, he brushed past, and held his friend in conversation for some minutes, in the street, about the Killarney races, no doubt, or the fun going on at Kilkee. I might have swept away a bagful of walnut shells, containing the flimsy gloves; but, instead, walked out, making him a low bow, and saying I would call next week. He said, Wouldn't I wait? and resumed his conversation; *and, no doubt, by this way of doing business, is making a handsome independence.*'

The Cork Institution is no less pregnant with instruction than the Limerick tradesman: —

'The plasters are spoiled irrecoverably for want of a sixpenny feather-brush; the dust lies on the walls, and nobody seems to heed it: two shillings a-year would have repaired much of the evil which has happened to this institution; and it is folly to talk of inward dissensions and political differences as causing the ruin of such institutions. Kings or laws don't cause or cure dust and cobwebs; but indolence leaves them to accumulate; and imprudence will not calculate its income, and vanity exaggerates its own powers; and the fault is laid upon that tyrant of a sister kingdom. The whole country is filled with such failures: swaggering beginnings, that could not be carried through; grand enterprises, begun dashingly, and ending in shabby compromises or downright ruin.'

After describing a new house going to rack and ruin, 'I 'would lay a guinea (we should be happy to back the bet) they 'were making punch in that house before they could keep the 'rain out of it; that they had a dinner-party and ball before 'the floors were firm, or the wainscots painted.'

A writer with such a pen and pencil as Mr. Thackeray's is an acquisition of real and high value to our literature, and we have not the slightest fear that he will either fall off, or write himself out; for, we repeat, he is not a mannerist, and his range of subjects is not limited to a class. High life, middle life, and low life, are (or very soon will be) pretty nearly the same to him: he has fancy as well as feeling; he can either laugh or cry without grimacing; he can skim the surface, and he can penetrate to the core. Let the public give him encouragement, and let him give himself time, and we fearlessly prophesy that he will soon become one of the acknowledged heads of his own peculiar walk of literature.

ART. III.—1. *Address to the Meeting of the British Association, held at Birmingham, 26th August, 1839; with Postscript.* By the Reverend W. VERNON HARCOURT. London, 1840.

2. *Historical Eloge of James Watt.* By M. ARAGO, Perpetual Secretary to the Academy of Sciences. Translated, with Additional Notes and an Appendix, by JAMES P. MUIRHEAD, M.A. Oxford. London, 1839.

3. *Correspondence of the late James Watt on his Discovery of the Composition of Water; with a Letter from his Son.* Edited, with Introductory Remarks, and an Appendix, by JAMES P. MUIRHEAD, F. R. S. E. London, 1846.

LATE in the summer of 1783, a voice went forth from Paris, announcing that the great French chemist, Lavoisier,

(assisted by his illustrious colleague, La Place,) had at last succeeded in discovering the true nature and constitution of Water; and completely proved that this most ancient Element was no longer to be regarded as an element at all, or a simple and primary substance; but was truly a compound body, produced by the combination of two airs or gases, which then first received, and have since retained, the well-known names of Hydrogen and Oxygen, respectively. The credit of this great discovery was of course universally ascribed, at the time, to these distinguished persons, at least on the continent of Europe; and their claim to it was, by a very excusable partiality, long afterwards maintained by the great body of their countrymen: and, for anything we know, may be still cherished among them, by some particularly patriotic individuals. It happened, however, that *in England* it was well known at the time to many men of science, both in Birmingham and in London, that this same discovery had been fully made, and clearly announced, several months before, both by Watt and by Cavendish: And it was accordingly suspected by most of them, and *actually known to a few*, not only that this English discovery had been communicated to the French philosophers before they began the experiments by which it was ultimately confirmed, but that they had at first expressed their disbelief in its reality; and had only been induced to engage in those experiments, by their desire to justify their original incredulity—or at all events to test, by the evidence of their own senses, the truth of a conclusion which appeared too startling to be admitted upon any lower authority.

Up to this time, the original experiments and conclusions of the English philosophers, though mostly embodied in contemporary records, and actually communicated to a considerable number of curious inquirers, had not been published in any shape to the world at large; and, consequently, were far less generally known than the pirated edition of them which had been circulated with great industry from Paris. But in the course of the following year (1784), papers containing full accounts of them, both by Watt and by Cavendish, were publicly read at meetings of the Royal Society of London, and shortly afterwards printed in their Transactions. Even these publications, however, though they no doubt produced their effect in this country, and never met, we believe, with contradiction anywhere, made their way but slowly and partially on the Continent; and consequently left the unscrupulous French Disciples very generally in possession of the plumes they had borrowed from their Masters. And it was not till two years later, that the scientific world in general was furnished with the means of

judging for themselves of the true merits of the question. But, early in 1786, Sir Charles Blagden, then Secretary of the Royal Society, felt himself called upon to address a letter on the subject to Dr. Lorenz Crell of Helmstadt, the editor of a scientific journal of large circulation, which was printed and disseminated all over Europe in the course of that year. In this letter all the learned men of the world had then the opportunity of reading the following memorable revelation; which, as bearing materially on every point and stage of this controversy, we think it necessary, thus early, to give to our readers entire:—

'I can certainly give you the best account of the dispute about the first discoverer of the artificial generation of water; as I was the principal instrument through which the first news of *the discovery which had been already made*, was communicated to M. Lavoisier. The following is a short statement of the history:—

'"In the spring of 1783, Mr. Cavendish communicated to me and other members of the Royal Society, his particular friends, the result of some experiments with which he had for a long time been occupied; and he showed us that, out of them, he must draw the conclusion, that dephlogisticated air was nothing else than water deprived of its phlogiston, and, *vice versâ*, that water was dephlogisticated air united with phlogiston. *About the same time* the news was brought to London, that *Mr. Watt, of Birmingham*, had been induced by some observations to form a similar opinion. *Soon after this*, I went to Paris, and in the company of M. Lavoisier, and some other members of the Royal Academy of Sciences, I gave some account of these new experiments, *and of the opinions founded on them.* They replied, that they had already heard something of the experiments; and, particularly, that Dr. Priestley had repeated them. They did not doubt that, in such a manner, a considerable quantity of water might be obtained; but they felt convinced that it could not come near to the weight of the two species of air employed; *on which account it was not to be regarded as water formed or produced out of the two kinds of air, but as already contained in, and united with, the airs, and merely deposited* on their combustion. This opinion was held by M. Lavoisier, as well as by the rest of the gentlemen who conferred on the subject: but as the experiment appeared to them very remarkable, they unanimously requested M. Lavoisier, who possessed all the necessary *apparatus*, to repeat the experiment, on a somewhat larger scale, as early as possible. This he complied with on the 24th of June, 1783. From his own account of these experiments, it sufficiently appears that he *had not* then formed the opinion that water was composed of dephlogisticated and inflammable airs; for he expected that a *sort of acid* would be produced by their union. In general, M. Lavoisier cannot, perhaps, be convicted of having said anything directly contrary to truth: but *it can still less be doubted that he concealed a part of the truth*; for he must have acknowledged that I had, some days before, apprised him of Mr. Cavendish's experiments;

whereas, the expression 'il nous apprit' conveys the idea that I had not informed him of them till that very day. In like manner, he has omitted the very material circumstance, that *his experiments were made in consequence of my having so informed him.* He should likewise have stated, not only that Mr. Cavendish had obtained 'une 'quantité d'eau très sensible,' but that *the water so obtained was equal to the weight of the two airs added together.* And, especially he should have added, that I had made him acquainted with *Messrs. Cavendish and Watt's conclusions; namely, that water, and not an acid or any other substance, was produced by the combustion of the inflammable and dephlogisticated airs.* But these conclusions opened the way to M. Lavoisier's present theory, which perfectly agrees with Mr. Cavendish's, except that he accommodates it to his old theory, which denies the existence of phlogiston. M. Monge's experiments (of which he speaks as made about the same time), were in fact not made till pretty long, I believe at least two months, after M. Lavoisier's own; and were undertaken on receiving information of them. The whole of this history will clearly show you that M. Lavoisier, instead of being led to the discovery by merely following up the experiments begun with M. Bucquet in 1777, was induced to institute such experiments *solely* by the account he received from me of our English experiments; and, that *he really discovered nothing but what had been before pointed out to him to have been previously made out and demonstrated in England.*"'

This seems, and in our opinion *is*, conclusive as to *the French* claim to the discovery. But as it has been surmised, in palliation of the disingenuousness which it appears to impute to most eminent and meritorious individuals, that Blagden, when thus writing at the distance of two years, may have misrecollected the extent of the information he had given verbally to the Parisians so long before, it is fortunate that we can now show, from documents recently brought to light, that he had openly given the same account *immediately* on his return to this country; and desired it to be communicated, on his authority, to those whom it most concerned. In a letter accordingly addressed to Watt by Kirwan, in December, 1783, immediately after the former had first heard of the French experiments, and expressed his suspicions of their origin, he says, 'Lavoisier *certainly learned* 'your theory (not experiments merely, but theory,) from Dr. 'Blagden, — who first had it from Mr. Cavendish; and afterwards 'from your letter to Dr. Priestley, which he heard read; and *ex*-'*plained the whole minutely to Lavoisier*, last July (mistake for '*June*). *This he authorised me to tell you.*' And Cavendish himself, in his paper, read in January, 1784, put openly on the record of the Royal Society, that, 'during the last summer a friend of 'mine gave an account of these experiments to M. Lavoisier, as '*well as of the conclusion drawn from them, that dephlogisticated*

'*air is only water deprived of its phlogiston:* but at that time 'M. Lavoisier was so far from thinking any such opinion 'warranted, that, *till he was prevailed upon* to repeat the ex- 'periment, he had difficulty in believing that nearly the whole 'of the two airs could be converted into water.'

These, we think, were public enough challenges to the advocates for the French discovery; and we are yet to learn that any champion ever appeared to take them up. The consequence has accordingly been, that the opinion of the scientific world has gradually settled down in favour of the English discoverers; and, that even the nationality of Frenchmen has at last given way to this universal conviction. In his *éloge* of Cavendish, in 1812, M. Cuvier distinctly admitted, that Lavoisier had been anticipated by that eminent chemist; and now we have the most distinguished member of the Academy of Sciences and the first of French chemists, M. Arago and M. Dumas, uniting to repudiate the obsolete pretensions of their countrymen — and distinctly awarding the whole merit of the discovery to Watt. It is between these two *English* competitors, therefore, that the controversy has now come to depend; and the questions we are about to consider, and, if possible, to determine, are, Whether Watt or Cavendish was the first to discover and announce the true composition of water? whether they were both independent, though not simultaneous, discoverers? or whether either was indebted for his conclusions to the labours or speculations of the other?

On some of these points we fear there may still be differences of opinion among candid and judicious inquirers; but on most of them we think there is no longer room for dispute: And as, at all events, we have now all the materials for decision which we can ever hope to obtain, it does not seem unreasonable to presume, that a controversy which began in 1783, and has already outlasted the longest Chancery suit on record, should at length be found ripe for judgment. In assuming the function of judging of it, we do not fear to be reminded that we pledge ourselves for the most scrupulous impartiality — the deep respect and admiration which we feel for *both* the competitors securing us, we trust, from any serious risk of violating such a pledge: And, strong as our individual convictions or impressions may be on some points still liable to dispute, we flatter ourselves that we shall not be betrayed into any expression which should raise a question as to the perfect fairness of our intentions. The great original facts, by which we think the issue must be determined, are so proved by contemporary writings as to admit of no serious dispute; and though there are subordinate matters as to which the testimony is less conclusive, the only substantial dif-

ficulties will be found to relate rather to the construction than to the credit of the evidence. In any view, however, it is necessary that we should begin with a brief summary of the facts.

In 1777, Macquer, an eminent French chemist, in burning a quantity of inflammable air at the mouth of an open bottle, and holding a cool porcelain saucer over the flame, observed that it deposited distinct drops of a clear liquor, which appeared to him to be nothing but *pure water;* but did not think of making this appearance the subject of any farther investigation. In April, 1781, Mr. Warltire, an ingenious lecturer on chemistry at Birmingham, on the suggestion of Dr. Priestley and in his presence, fired, by the electric spark, a considerable volume of oxygen, and an inflammable gas (which seems to have been hydrogen) in a *close* glass vessel; and observed not only that most of the airs had disappeared, but that the inside of the glass, when it cooled, was covered with *a dew or moisture;* which they both took to be water: But did not weigh or examine—as their only object in making the experiment was to ascertain, by carefully weighing the apparatus before and after the explosion, whether the *light and heat* which escaped, and were dissipated in the course of it, were or were not *ponderable substances.* The experiment itself, however, being published soon after by Priestley, became known to Cavendish, who, in the course of that and the following year (1781 and 1782) repeated it, with many most patient and elaborate variations: in the course of which he may be said to have ascertained, that something about two volumes of hydrogen (or inflammable air from the metals, as he terms it,) being exploded in a close vessel with one of oxygen, (the dephlogisticated air of those times,) the airs disappeared to within one-fiftieth part of their original bulk; and in their place a quantity of water was deposited, nearly equal in weight to that of the gases employed. In short, though the processes were conducted with far less care and accuracy than those afterwards instituted by Lavoisier, Monge, Berzelius, or Dumas, it is not, we think, to be denied that Cavendish then performed those experiments, and observed those results, from which, either he himself at the time, or Watt at an after time, or he again after Watt, drew the grand and momentous conclusion, that water was not a simple but a compound body; and that it was composed of the two gases we have mentioned, combined in the proportions now specified. But it is most remarkable, that in the original note-book or diary, in which he recorded at the time, and in very great detail, the whole series of these experiments, there is no direct or express notice or intimation that he had actually drawn that conclusion, or made the great discovery which it

implies. The nearest approach to it is, that he repeatedly speaks of the water as having been *condensed* on the sides of the glass — an expression properly descriptive of its mere depositation from the steam or vapour, under the form of which it had first appeared: And, there certainly is no sort of evidence that he ever intimated such a conclusion to any one till very long after. The experiments, themselves, however, he did communicate to Priestley, apparently about the end of 1782 or beginning of 1783. And this brings us at once to the case of his illustrious competitor.

Priestley was then resident at or near Birmingham, in the immediate neighbourhood of Watt, with whom he appears to have lived in great friendship and intimacy; and to have been associated with him, indeed, in many of his philosophical researches. Priestley was then much occupied with a notion that water might be converted into a permanent gas or air (which Watt also had long thought probable), and accordingly proceeded with much eagerness to repeat Cavendish's (or rather his own and Warltire's) experiments, in a great variety of forms. In some of these he found, or, at least reported to Watt that he had found, that on detonating oxygen with a certain proportion of inflammable air, the whole of both airs disappeared to within about one two-hundredth part of their original volume; and left in their place a quantity of pure water equal, as far as could be judged, to the weight of the gases consumed. How this communication was made does not exactly appear; but as it forms no part of the correspondence preserved, it is most likely to have occurred in conversations between the parties, who were continually meeting; and there is every probability, indeed, that at some of these experiments Watt was personally present. But, however his information as to the facts was obtained, it is at least certain that so early as 21st and 22d April, 1783, Watt wrote to Dr. Black, *to Priestley himself*, and to Mr. Hamilton of Glasgow, that 'he had found out the cause' or interpretation of these remarkable phenomena; and become satisfied that water was not a simple but a composite substance, and that its ingredients were the two airs which have been mentioned, combined in the proper proportions. The precise terms of these announcements we shall afterwards have occasion to cite; but for the present it is enough to remark, that, if they amounted to a true account of the composition of water, the letters containing them (which are all now printed) undoubtedly constitute the very first record and announcement of the fact that is yet known to exist. It may also be observed in passing (though we may recur again to this topic also), that Priestley never pretended to have drawn this

bold conclusion for himself — but always spoke of it as the system or theory of Watt; and, though at one time professing to think it 'highly probable,' (for he never got farther,) ended by entirely repudiating it; and died, we rather think, the very last unbeliever in a discovery, to which he was thought at one time to have materially contributed.

In the mean time Watt's letter to him was copied out, with some slight corrections, on 26th April, 1783, and again transmitted, of that date, to Priestley in London, with a request that it should be laid before the Royal Society, along with a paper of Priestley's own on 'Phlogiston, and the apparent conversion of 'water into air;' in which some, though apparently but a very few, of the experiments on which Watt had founded his conclusion were detailed. This letter was accordingly received by Priestley, who 'after showing it to several members of the Society,' delivered it to Sir Joseph Banks, their respected president: But it was not publicly read till the year after, in consequence of a request to that effect from Watt, who wished to verify some of his observations by farther experiments. But it is stated, in the note printed along with it in the Transactions, that it remained in the hands of the president, and of course accessible to the Fellows, till it was finally read, as a separate paper, at a meeting held on 22d April, 1784.

Hitherto, all the dates — and it is needless to say of what vital importance they are in such a question as this — are precisely ascertained; and all the facts incontrovertibly established by extant contemporary documents. But we come now to occurrences, the dates of which are comparatively vague and indefinite, and the evidence, to say the least of it, of less absolute authority. We refer to the statements (already cited) in Blagden's letter to Crell, that 'in the spring of 1783,' and 'about the time' when news of Watt's conclusion had come to London, and 'recently before' he himself went to Paris, (all we know of which is, that he was there several days before 24th June,) Cavendish mentioned verbally, and apparently for the first time, to him, and some other 'particular friends,' (not named,) that he had performed the experiments already referred to, and also drawn from them a conclusion similar to Watt's, as to the composite nature and actual ingredients of water; though it is not said that he then stated at what time he had drawn that conclusion. It may be necessary hereafter to observe farther upon this evidence; but assuming it to be substantially correct, we have now only to remark, that there is not the slightest indication, or surmise even, in any quarter, that it ever came to Watt's knowledge; though, before forwarding a fresh copy of his April letter,

along with the supplement addressed to De Luc in the end of November, 1783, it appears that he had heard something of the alleged discoveries of the French academicians, and expressed a strong suspicion (knowing nothing as yet of Blagden's actual communication) that they had, in some way or another, got notice and availed themselves of what he never ceased to consider as his original discovery: But he had obviously at this time no apprehension of a rival at home. At last, however, in January, 1784, Cavendish had read before the Royal Society a long and elaborate paper, in which his experiments are very fully detailed, and the inference, as to the composition of water, substantially drawn — though, we must say, far less confidently and directly than might have been expected from one to whom it had long been familiar. The most remarkable thing of all, however, is, that, while the experiments themselves are anxiously stated to have been all made in 1781 and 1782, it is no where set down, or even indirectly intimated, at what time this inference from them was made.

Watt, not then a member of the Society, and busy with his steam engines at Birmingham, heard nothing for some time of this paper; nor, indeed, did it come to the knowledge of his friend De Luc for many weeks after its reading. But on the 1st of March, 1784, that learned person writes, in some perturbation, to his friend, 'Mr. Cavendish has had a long paper read 'to the Royal Society, on the combustion of the two airs, &c.; 'I have just read it; and you will be *astonished* at what I shall 'tell you of it, as soon as I have leisure to write: but the sum 'is, *that he expounds and adopts your system, word for word,* and 'never mentions your name!' A few days after, he forwards an abstract of the paper; and concludes some observations on it by saying, that 'it is still *possible*' that Cavendish may not have stolen from him; and that, at all events, it would be prudent, with a view to his pecuniary interests, not to make enemies by saying too much about it; but rather to content himself with carefully authenticating, and putting on record, the actual date of his own discovery, and leaving it to time to do him justice. Watt's answer is too characteristic to be omitted: 'I by 'no means wish to make any illiberal attack on Mr. Cavendish. 'It *is* barely possible that he may have heard nothing of my 'theory; but, as the Frenchman said, when he found a man in 'bed with his wife, "*I suspect something!*"

'As to what you say of making myself *des jaloux*, that would 'weigh little with me; for, were I convinced I had had *foul play* '—if I did not assert my right, it would either be from a con-'tempt for the *modicum* of reputation which could result from

'such a theory, from the conviction of my own mind that I was 'their superior, or from that indolence which makes it easier 'to me to bear wrongs than to seek redress. In point of inte-'rest, in so far as connected with money, *that* would be no bar; for 'though I am dependent on the favour of the public, I am not 'on Mr. C——, or his friends; and could despise the united 'power of "*the illustrious house of Cavendish*," as Mr. Fox calls 'them.

'You may be surprised to find so much pride in my cha-'racter: and it does not seem very consistent with the diffidence 'which attends my conduct in general. But I am diffident, 'because I am seldom *certain* that I am in the right; and 'because I pay respect to the opinions of others, where I think 'they merit it. At present, *je me sens un peu blessé*. It seems 'hard that, in the first attempt I have made to lay anything 'before the public, I should be *thus* anticipated.'

He ended, however, by substantially taking his friend's advice; and applying to the secretary of the Royal Society to have his original letter to Priestley (of 21st and 26th April, 1783,) read at an early meeting of that body; expressly stating that 'his only reason for wishing this was, to show what his ideas 'on the subject were, *at the time it was written*.' This, as we have already seen, was almost immediately complied with; and that letter separately read on the 22d April, 1784; the subsequent communication to De Luc on the same subject being also read on the 29th April, and 10th May following. When these two papers, however, came to be printed, it was suggested *by Blagden* (lately appointed secretary), that they should be incorporated into one article; to which Watt, with his habitual facility, at once assented; and left the whole superintendence of the printing, without even caring to see the proof-sheets, to his correspondent; but, at the same time, distinctly stipulated that all that was in the original letter of April should be distinguished by inverted commas in the consolidated publication; and that a note should be added purporting that 'the letter of 'April was received by Dr. Priestley in London; who, *after* '*showing it to several members of the Royal Society*, delivered it 'to Sir Joseph Banks, the president; with a request that it 'might be read at some of the public meetings. But before 'that could be complied with, the author, having heard of Dr. 'Priestley's new experiments, begged that the reading might be 'delayed. The letter was, therefore, *reserved* till the 22d of 'April last, when it was read before the Society.' All this was accordingly done; and the paper, with this note annexed, finally committed to the press in August 1784; and at the same time with the analogous communication of Cavendish.

These two rival papers, accordingly, now stand amicably together, and with the right dates, in the seventy-fourth volume of the Transactions: But in the separate copies which were previously issued for circulation among the Fellows, and the friends of the authors, there was an unlucky *interchange* of these dates — Cavendish's paper being there stated as read (there being no date of writing) on the 15th January, 1783, instead of 1784; and Watt's letter to De Luc (embodying the prior one to Priestley) as of the 30th November, 1784, instead of 1783. A brother journalist, we observe ('North British Review' for November, 1846), is of opinion that this palpable blunder was truly occasioned by a dishonest attempt on the part of Blagden to give an unfair advantage to his friend Cavendish. But we must say that we see no grounds for imputing so unworthy, and so shallow a device to these respectable individuals — though we can well understand that, when it first came to Watt's knowledge, he must have heartily repented having left the correction of the press to any hands but his own. Though he notices the blunder, however, in a letter to De Luc in June, 1786, he never appears to have made any public reclamation on the subject; and seems, indeed, after having thus registered his claim, to have given way to his natural dislike of wrangling and controversy, and been contented to abide the final award of the judicious, upon a matter as to which we have already seen that he was at the time, and now learn, from the unimpeachable testimony of his son, that he *always remained*, far enough from being indifferent.

In the interesting letter of the present Mr. James Watt, prefixed to Mr. Muirhead's publication, he states that, 'whenever 'the theory of the composition of water was spoken of in 'presence of my father, *he calmly, but uniformly, sustained his* 'claim to the discovery.' But when urged to expose any misrepresentations that had been published in regard to it, answered that 'he thought he had done enough by putting his case on 'record, in his papers and note in the Philosophical Transactions, 'and should leave posterity to decide.' He had matters, indeed, if not of higher interest, at least of more immediate urgency, to attend to; and, accordingly, after carefully collecting, docquetting, and laying aside the whole of his correspondence on the subject up to 1786, he appears to have returned very contentedly to complete his magnificent improvements on the steam engine, and to have concerned himself but little about the fate of this, his still greater achievement in chemistry. Cavendish, in like manner — and, it may be, from the same reasons — seems to have been equally willing to leave his case, as it stood, to the umpirage of coming time; and never, in so far as we know, made

any answer to the statements in Watt's papers: and it is a satisfaction to know, as we now do from the letter already referred to, that these two distinguished individuals soon after became personally acquainted, 'and lived on good terms with each other.'

In the mean time, the great Umpire to whom they had both referred, does not seem to have been in any haste to come to a decision; and the world of science may be said, for a long time, to have accepted the great revelation that had been made to them, without manifesting any extraordinary anxiety to adjust the rival claims of those from whom it had been received. On the Continent indeed, many who ought to have known better, continued to give the whole credit of it to the French academicians; and it is certainly true that, when any English name was associated with theirs, it was far more frequently that of Cavendish than of Watt. But this, we think, is to be accounted for on grounds quite apart from any considerate recognition of the superiority of his claims. In the first place, Cavendish had been far longer and more conspicuously known as a chemist—Watt's reputation being almost exclusively that of an inventive mechanician and engineer. Secondly—and this is far more material—Lavoisier, in the scanty and imperfect notice he takes, in his Memoire, of Blagden's communication of the English experiments, *gives the name of Cavendish only*, as connected with them, and makes no mention whatever of Watt; though it is certain that he was named by Blagden (perhaps not very willingly) as *in pari casu* in all respects with the other. Finally, the blunder we have already mentioned in the dates of the rival papers, on their first and separate publication, must necessarily have led many to the conclusion that Cavendish's priority was unquestionable; nor will any one be disposed to undervalue the effect of this accident, when he finds that, even in 1808, Cuvier, in his 'Rapport Historique,' was so far misled by it, as to give that erroneous date, of January 1783, as that of the reading of his paper.

In this country, however, where the interest of the question was greater, and the materials for deciding it more accessible, the suffrages of the wise have been very differently divided; although we must say that, during the joint lives of the parties, no very careful or accurate investigation of its merits can be said to have been undertaken. Cavendish died in 1810, and Watt in 1819; and before the first of those dates, though the merit of the discovery was, perhaps, most frequently assigned to Cavendish, by writers who, for the most part, touched but incidentally on the question, there was yet no want of persons, of at least equal authority, who gave the palm to

Watt. Nicholson, in his 'Chemical Dictionary,' published in 1795, as well as in his earlier translation of 'Fourcroy,' divided the prize between them. But the writer of the excellent article on Water in the third edition of the 'Ency-'clopædia Britannica,' published in 1797, distinctly says that 'Watt appears to have been the first person who formed the 'true theory.' In the annotated edition of Fourcroy, too, by the late Dr. John Thomson of Edinburgh (1798), the very learned editor subjoins this note to his author's citation of Cavendish as the discoverer in virtue of his paper of 1784: — 'It 'is but justice to add, that the same inference *had been made* 'by Mr. Watt, and communicated by him in a letter to 'Dr. Priestley, in April, 1783.' In Dr. Thomas Thomson's Chemistry of 1804, and Murray's of 1806, while both are allowed to have been independent discoverers, the priority is distinctly assigned to Watt; and in a very early number of this journal (1803), Lord Brougham, after mentioning the experiments so often referred to, says, with becoming caution, that, 'reasoning from these facts, *some ingenious men, particularly* '*Mr. Watt*, had deduced the conclusion that water is a com-'pound of the two airs, deprived of a considerable portion of 'their latent heat.' Sir Humphry Davy, too, in a lecture which his brother supposes to have been written in 1806, thus nicely apportions the shares of merit due to the two still living competitors: — 'In 1781 Mr. Cavendish, in a process conceived 'with his usual sagacity, and executed with his usual precision, '*showed* that when common air and hydrogen were exploded 'together, the product was pure water, exactly corresponding 'in weight to the gas consumed. *And Mr. Watt, reasoning on* '*this experiment, formed the conclusion*, that water consisted of 'pure and inflammable air, deprived of much latent heat.' And finally, no less a person than Dalton says, in his 'New System of Chemical Philosophy,' published in 1810, that 'the composi-'tion and decomposition of water were now severally ascertained; 'the former by Watt and Cavendish; the latter by Lavoi-'sier and Meusnier.' The names are here put on the same line, — except that Watt's is put first. But in his History of the Royal Society, published only two years later, after mentioning Cavendish's paper of 1784, Dr. Thomas Thomson states more explicitly, 'Mr. Watt had *previously* drawn the same conclusion 'from the experiments of Dr. Priestley and Mr. Warltire.'

So matters stood during the lives of the parties, and while many of the materials for judgment, now before the public, were not accessible to those who took part in the controversy; and, in fact, it was not till after Watt's death in 1819, that any

thing like a complete investigation was possible. On that event, the whole papers and correspondence in his repositories came, of course, into the hands of his only surviving son, the present worthy inheritor of his name; and, upon examination, produced so strong a conviction of the justice of his father's claims, as almost to determine him to make an immediate publication. Before taking this step, however, he naturally thought of consulting his learned friend and neighbour Mr. John Corrie, the President of the Birmingham Philosophical Society; who, after a careful perusal of the documents, concurred entirely in the same view of their import; and in the following summer he again submitted the whole evidence to the deliberate consideration of the late Dr. W. Henry, of Manchester, probably the very highest authority that could then have been referred to on such a subject. The result of his examination is fortunately preserved in a letter from him of June, 1820, of which we cite only this material passage. After stating that he had attentively considered the published papers of Watt and Cavendish, and the other documents left with him, he says, 'It is es-'tablished beyond all dispute, by a comparison of dates, that 'your father was the first to interpret rightly the important 'experiments showing the synthesis of water. The first, too, 'who had the sagacity to draw the right conclusion from the 'experiments of Dr. Priestley; and to take that view of the 'constitution of water, which, up to this time, continues to be 'received by philosophers as the true one.' As Mr. Harcourt has fallen into some strange mistake as to Dr. Henry's opinion on this subject, and may, perhaps, suggest that he had subsequently seen reason to change that which is here expressed, it may be right to mention, that Dr. Henry not having seen *the originals* of the correspondence when he wrote the letter now cited, the present Mr. Watt took an opportunity of submitting them to him, when on a visit to him in 1836; when they were again carefully gone over, and strongly corroborated his original impression. This fact, which we should readily take on Mr. Watt's own statement (at p. v. of his letter to Muirhead), is fortunately confirmed by a recent letter from his son, Dr. W. C. Henry, which states, 'My father, I distinctly remember, came 'from his last visit to you, after a full examination of the docu-'mentary evidence you then submitted to him, impressed with '*a clear conviction* that Mr. Watt was the first to interpret rightly 'the experiments of the synthetic formation of water; and must be 'regarded as the discoverer of the true theory of its composition.'

In the course of the same year Mr. Watt also submitted the documents which had thus satisfied Dr. Henry, to the late Dr.

Hope and to Sir D. Brewster; to whom, as he has most candidly stated, they did not appear so satisfactory. Sir David, however, lived entirely to get over his difficulties; and has lately published an eloquent vindication of Watt's claims; to which little can be objected, but some excess of severity towards Cavendish and Blagden, and some of their supporters. In 1824, Mr. Watt also contributed to the new edition of the Encyclopædia Britannica, then in the course of publication, a most modest, lucid, and temperate statement of his father's claims to this great discovery; which, along with the correspondence in his possession, he submitted to Sir H. Davy in the course of the same year; who appeared very much struck by their contents; and having long cherished (as was most fitting) a deep and sincere veneration for the memory of Cavendish, expressed some concern at the effect their publication would probably produce: But, neither at that time nor at a subsequent meeting in 1826, attempted in any way to dispute the deductions which he admitted them to warrant. For the satisfaction of the captious reader (if we should have any such) it is proper to say that this statement rests entirely on the authority (to us all sufficient) of Mr. Watt himself, in his letter to Mr. Muirhead, already referred to. (p. x.) We come now, however, to still more distinguished testimonies.

In 1833 M. Arago, the Perpetual Secretary of the Academy of Sciences at Paris, was directed by them to prepare an Eloge of Mr. Watt, their late associate, to be enregistered in their archives: and came accordingly to England the year after, to obtain the necessary information. He had previously carefully studied all the published documents relating to the composition of water; and had become satisfied as to Watt's preferable claims to the merit of the discovery; but was so much struck with the additional evidence afforded by the correspondence in the hands of his son, as to request permission to make use of it in drawing up his memoir; and was furnished with full copies accordingly. The Eloge was read before the Academy in December, 1834; and, while it was in the course of publication, Lord Brougham supplied its illustrious author with a most valuable historical note on the progress of the discovery; which was afterwards printed along with it in the Memoirs of the Institute, and in the *Annuaire du Bureau de Longitude*, early in 1839. In this eloquent and elaborate production M. Arago magnanimously overrules and sets aside the claims of his illustrious predecessors of the Academy; and pronounces a deliberate and unhesitating award in favour of Watt, as in competition not only with them but with Cavendish; expressing, indeed, not a little surprise, and something like indignation, that his claim

should ever have been contested; and coming nearer an impeachment of the good faith of his antagonist, than we conceive to be altogether justifiable.

Stimulated probably by these insinuations, the Rev. W. Vernon Harcourt, when called to occupy the chair of the British Scientific Association, on its meeting at Birmingham in August, 1839, was moved to devote a large part of his inaugural address to a strenuous vindication of the claims of Cavendish, and an entire repudiation of those of Watt. We cannot say that, either the scene, or the character which he then filled on it, was very happily chosen for such an exhibition. But the pious zeal which dictated the selection, must, we suppose, be received as its apology; and may serve also to account for the rashness of some of the assertions, and the piquancy of some of the imputations, with which the performance abounds. And these, of course, soon met with an appropriate return. Mr. J. P. Muirhead, an intimate friend and connexion of Mr. Watt's family, was then about to publish an annotated translation of Arago's Eloge; to which, after seeing this address of Mr. Harcourt, he subjoined a note; in which the spirit and import of that discourse are animadverted on, in terms of some bitterness, and no great respect: and a similar note was soon afterwards published by Lord Brougham, when reprinting his historical note in the publication of his 'Lives of Men of Literature and Science.' But the most signal retribution was that which followed on the part of M. Arago and M. Dumas, at a sitting of the Academy of Sciences in January, 1840. In presenting a copy of Mr. Muirhead's translation of the Eloge to that learned body, the distinguished secretary announces that he may probably take a fitter opportunity to reply to the unusual language and inexact statements of Mr. Harcourt; but contents himself, in the meantime, with refuting what he calls one inconceivable assertion of his; and then gives place to his most learned associate Dumas, who comes forward to state, that 'after attentively considering 'the arguments of his learned colleague, and having also scru-'pulously studied the correspondence of the illustrious engineer, 'as it is preserved at Aston Hall, he *adopts completely, and in* '*all its parts, the account which M. Arago has given of the dis-*'*covery of the composition of water;* and, as his opinions upon 'the point are so conclusively formed, he desires that this state-'ment may be recorded in the journals of this sitting.' And a more authoritative deliverance we suppose will not easily be found in any such register.

Mr. Harcourt, however, was not to be so daunted; and, after a short pause, returned to the charge, with a Postscript extend-

ing to more than double the size of his original address; to which was annexed a copious appendix of extracts from the unpublished papers of Cavendish, with elaborate lithographed *fac-similes* of all the entries in his chemical diary relating to the experiments in question; and, apparently, not satisfied even with this, (or the effect produced by its publication), again took occasion, upon the recent appearance of Lord Brougham's Lives of Men of Science, to address that learned lord in a most voluminous expostulatory letter, contained in successive numbers of the London and Edinburgh Philosophical Journal for 1846. We may have a word to say to the argument in these papers by and by; but at present we shall only observe, that, though they certainly display much learning, industry, and acuteness, we do think that, considering the persons against whom he had chosen to match himself, and the mistakes into which he had fallen *, a tone somewhat less arrogant and dictatorial might have been more becomingly adopted. But we must hasten now to the end

* Some of those slips in the earlier papers are partially corrected in the later; but many considerable ones remain. The most remarkable, perhaps, is that about the late Dr. Henry, to which we have already alluded. He very justly describes him, in his postscript, as a pneumatic chemist of the very highest reputation, and 'one 'whose knowledge, acuteness, and candour, were such as eminently 'qualified him to judge on such a question;' and then proceeds to say, that he had learned from him that the perusal of the (then) unpublished correspondence in Mr. Watt's hands, had made no change in his conviction that Cavendish was to be considered as the first discoverer of the composition of water. We have already seen, from Dr. Henry's own letter (now given *in extenso* by Mr. Muirhead), what was the real conviction of this most competent judge; and, notwithstanding the somewhat unworthy cavils in which Mr. Harcourt indulges (in the very close of his letter to Lord Brougham), as to his having seen only an *abstract* and not an *extract* from the corroborative letter of Dr. Henry's son, and even on the necessity of seeing *the whole* of that letter, we scarcely imagine that he will *now* hesitate to acknowledge his mistake; and to admit that he must have misunderstood or misrecollected what he supposed he had heard from Dr. Henry. Another uncorrected mistake is, where (in his address) he actually assumes that Watt had derived his later (and probably erroneous) impression, that the inflammable air of his experiments was combined with some water, from Cavendish, because this does not appear in his first letter of April, but only in the continuation of it in *Nov.* 1783; '*after*,' as Mr. Harcourt is pleased to say—'*after* the pub- 'lication of "Cavendish's theory," which theory was not disclosed to the 'Society itself till *January*, 1784, nor *published*, so as to reach Watt, 'till August thereafter.' We might multiply instances of this sort; but it is the part of our task in which we have the least pleasure.

of this mere muster of the forces. Berzelius, the great chemist of Sweden, ranged himself on the side of Watt, in 1841 (as Brande had done before in 1834), while a Quarterly Reviewer, that distinguished mathematician, Dr. Peacock, Dean of Ely, follows in Mr. Harcourt's footsteps in 1846; and the learned Master of Trinity College, in a brief note to the new edition of his History of the Inductive Philosophy, professes his adherence to the same views. But the fate of the battle is probably to be decided by a force hitherto kept in reserve.

Mr. Watt, we now learn, had long contemplated the publication of his father's correspondence on this subject, together with many of his other unpublished papers; but was impeded, first, by the growing pressure of business, and, more lately, by the decay of his sight; so as to have been at last induced to resign this pious office to his learned and intelligent kinsman and friend, Mr. Muirhead; who has discharged himself of it in a way which must have been as gratifying to his principal, as it is undoubtedly creditable to himself, by the publication of the largest of the volumes now before us. This embraces not only the correspondence itself, with an appendix, containing the whole of the original papers read to the Royal Society in 1784, both by Watt and by Cavendish; the original memoirs of Lavoisier and Meusnier in the same year; the subsequent memoir of Monge; Blagden's letter to Crell, the part of M. Arago's Eloge, which relates to this controversy, with the historical note of Lord Brougham, and the notice of MM. Arago and Dumas's reply to Mr. Harcourt in the Journals of the Academy of 1846, but also a most interesting letter from the present Mr. Watt to the editor, and a very acute and elaborate dissertation by Mr. Muirhead himself on the whole evidence and bearings of the question. Its only fault, indeed, is, that it is rather too anxious and minute; and comments with an excessive, though not altogether unprovoked asperity, upon the statements of Mr. Harcourt and his reviewer. The last publication of all on the subject is Sir D. Brewster's late review in the 'North British;' in which, with the whole of Mr. Harcourt's lucubrations before him, he now gives an unhesitating decision in Watt's favour; and sets aside all the reverend gentleman's vehement and erudite argumentations, with as little ceremony as he renounces his own original heresies.

It must have been rather mortifying, we fear, to Mr. Harcourt to meet with such a rebuke from a man of Sir David Brewster's well-earned European reputation. But worse mortifications are behind. In his postscript, and his letter to Lord Brougham, the reverend polemic anticipates, with extraordinary

confidence, the instant conversion of MM. Arago and Dumas immediately upon their perusal of these performances; and dwells with singular complacency on the admission and retractation of their errors, which he is sure they must hasten to proclaim, as soon as they have perpended his reasonings. It is a pity that expectations so modest should be doomed to disappointment. But the fact is even so. MM. Arago and Dumas, instead of being converted by Mr. Harcourt, are confirmed and impenitent in their original creed. Since writing the above, we have received the *Comptes Rendus* of the Academy of Sciences for January 1847; and find it there recorded that M. Arago, in presenting a copy of Mr. Muirhead's last publication to that body, not only took occasion to express no very reverent opinion of the '*échafaudage d'arguties*, élevé à grande peine, par M. Harcourt 'Vernon, et ses proneurs,' but intimated that, though Mr. Watt and Mr. Muirhead had left him but little to do, he felt that he owed it to the memory of the great engineer, still 'to do some-'thing to ensure the triumph, in his person, of *the right and the* '*truth*, over the prejudices, the blindness, and the blunders of 'his opponents.' M. Dumas does not seem to have been present on this occasion; and Mr. Harcourt may probably be consoling himself with the hope, that the great chemist, at all events, has been touched by his arguments, and has no longer courage to range himself by the side of his rash associate. It is cruel, we confess, to dispel so pleasing a vision, and rout this forlorn hope. But we are pledged to a stern duty; and have, therefore, to announce, that *we are authorised, by M. Dumas himself*, who is now in this country on an important mission from his government, to state, 'that he has only been confirmed in 'the opinion which he put upon record nearly seven years ago,' by the consideration of Mr. Harcourt's publications, and the review of the whole question to which he was thus led. We are permitted also, we believe, to mention, that having lately been persuaded to undertake a full account of the life and discoveries of Lavoisier, he has been put in possession of all his original manuscripts and correspondence on the subject of the composition of water, and has found in the study of them strong additional reasons for awarding the whole glory of that great discovery to Watt. We should be more sorry for Mr. Harcourt, in making this annunciation, if he had shown a less unbounded confidence in his own reasonings and powers of refutation; as it is, we can only hope that he may at length profit by the rebukes he has drawn down on himself; and, that if he should take the field again, he will at least avoid the error of ushering in his defeat by a song of triumph. We have reason to know, too, that

Lord Brougham, for whose conversion he has taken such laudable pains, is just as heretical and as impenitent as the academicians of Paris; though he cannot fail to be grateful for the concern the worthy Canon feels at his having exposed himself; and, perhaps, even thinks that there may be as good reason for some kind friend's exhorting *him* to stick to his theology, as the other can have had for counselling him to keep to his law. But we gladly turn away from these idle personalities.

After this long deduction of facts and authorities, it may appear that it should be easy to come to a conclusion; and certainly, if it were a question to be ruled by authority, the decision would not be difficult. Since, looking only to the opinions delivered since the materials for judgment were completed, we find on one side the names of Henry, Brande, Davy, Brougham, Brewster, Arago, Dumas, and Berzelius; and on the other, those only of Harcourt, Peacock, and Whewell. But, let the chemists say what they will, it is *not* a question of science or authority half so much as of Logic and Evidence; and if we did not think it one which might be fairly left to the judgment of educated men, with but a moderate reference to a few admitted facts and principles of chemistry, we should scarcely have presumed to judge of it for ourselves, — and certainly should never have thought of submitting it to the judgment of our general readers. As it is, however, we do presume to say, that upon the evidence now before us, we confidently expect to satisfy all who will take the trouble to follow us, of the truth of these three propositions: — 1st. That whatever Watt propounded as a theory or discovery in 1783, was truly an original theory or discovery of his own, and not borrowed from or suggested by any other person; 2d. That what he did then propound and announce was, in terms and in substance, the true theory of the composition of water, as it is now received and understood; and, 3d. That he was the first to announce that theory. All those propositions, it will be understood, are controverted, more or less, by the favourers of Cavendish; but we shall have no great difficulty, we think, in establishing the whole of them, — though the second may require some range of elucidation. But after these are settled, there will still remain the more doubtful and embarrassing question, whether Cavendish also was an independent and *earlier* discoverer? or, whether he was in doubt and perplexity as to the conclusion to be drawn from his own experiments, till enlightened and encouraged by the clear and confident announcements of Watt? Upon this question we are far from expecting such an entire concurrence of opinion, as we cannot help anticipating on the others; and, while we should

ourselves be most gratified by the ultimate preponderance of that which did most honour to Cavendish, we are bound to say that the present leaning of our convictions is in the opposite direction; though in a way which we trust will be found to imply no impeachment of his good faith or honour.

And with reference to this last observation, and before going to the proof at all, we think it necessary to say, that we can by no means adopt those narrow and jealous canons of evidence, derived from the rigid maxims of law, or the precedents in cases of Patent, by which both M. Arago and Sir D. Brewster seem anxious to limit the inquiry. Courts of law must proceed upon inflexible rules, and can make no distinction of persons; and are forced, therefore, peremptorily to reject all evidence proceeding from the parties concerned, or from those having interest in the issue; though it is certain that by so doing they must occasionally decide against the truth, and the conviction of all unprofessional observers. The question in a court of law, in short, is never really what the truth of the case is, according to the actual and conscientious belief of the judges (or jury), after considering every atom of producible evidence that is in existence, but merely what the import is of the evidence that *is legally admissible*. But in a case like the present, where the only judge and jury is the intelligent public, and where there is neither any motive for excluding *any* proof which can at all affect the ultimate conviction of that multitudinous tribunal, nor any power by which the parties and their advocates can be restrained or limited in the production of it, it would, evidently, be mere affectation and absurdity in those who may assume the office of summing up for their assistance, to leave out of view any thing that is so produced, or producible; or to pretend to shut their eyes upon those parts of the evidence which, though strictly inadmissible in a court of law, they yet know to be producing and *to be entitled to produce*, the greatest possible effect upon the honest and intelligent minds from which the decision must proceed. In all questions before the public, in short, *no evidence is inadmissible;* nor can there ever be any question, except as to *the credit* to which it is entitled: While the court is always open for as many appeals and new trials as the parties may choose to venture on.

The analogy of the law of Patents is still more palpably inapplicable. A patentee gets his monopoly as a reward for being the first *to make the public participant* of an useful discovery; and therefore it is most just that he should not be excluded from this reward by any rival claimant, who only offers to prove that he had previously made the same discovery, but admits

that he had never disclosed it. But where the competition is merely for the intellectual glory of the discovery itself, it is plain that no such principle can apply; and that the palm of priority in the invention may be justly awarded to one who has been forestalled in the publication; while that of original and independent invention may be shared between both. Where there is any doubt, however, as to the priority of actual discovery, it is obvious that the priority of announcement may often be of the most decisive importance; and perhaps this is all that M. Arago really meant when he said, 'It would not be too 'much to require that the historiographers of science should 'follow the example of courts of law; and admit no titles but 'such as were in writing, or perhaps even such only, as were '*registered*.' But in the literal sense of this requirement, we certainly cannot acquiesce.

At all events, we are clear, for our own parts, that proofs of prior discovery are available, though not disclosed at the time; and also that the evidence of the discoverers themselves is always to be received; and such effect given to it as the known character of the individuals and the circumstances of the case may require. And, accordingly, in this particular case, we do not hesitate to say, that if Cavendish had any where distinctly and positively stated that he had fully drawn his conclusions as to the composition and ingredients of water, before the dates of Watt's first letters, in spring 1783, we should have required no further evidence of the fact; but at once admitted him to the honours of an original and a prior discoverer. Nay, if Sir C. Blagden had clearly and expressly stated that the verbal communication which he says Cavendish made of this discovery to him and other members of the Society, was certainly so made before he or they had heard any thing of a similar communication on the part of Watt, we should not have hesitated to say that the merit of the *first disclosure*, as well as of the first discovery, was well proved to lie with Cavendish. And this we should have done, not from any romantic strain of liberality towards these individuals, or from any forgetfulness of the sound canons of evidence, but simply because *we could not ourselves have helped believing* statements so made by such persons; and because we must have felt that they would be believed by all those whose judgments in any case we could either wish or care to influence. And would they not have been most worthy of belief? The higher elements of our nature are not so discordantly blended within us, as that the love of honourable fame should lead to the disregard of truth and honesty. But Cavendish was almost as remarkable for his indifference to fame, as for the high principle

and honour that belonged to his station and his character; and it would have been strange indeed, if, for the sake of adding one more to his many intellectual triumphs, he had stooped, by a deliberate falsehood, to the very lowest depths of moral degradation. Nor have we any reason to think that his friend Blagden, who had not even the temptation of a rival claim to mislead him, would have stooped to such a baseness. But the painful part of the case is, that neither of these honourable persons makes such a statement as we have specified—or any thing like it. But, on the contrary, both appear rather to have evaded, or, at least, purposely avoided it, in circumstances where they seemed called on to make it, if it could have been made with truth.

In the case of Watt, however, there is, at all events, no want of such a precise statement: And, on the principles already explained, we see no occasion to go beyond that statement for proof of our first proposition,—as to the absolute originality of the discovery announced by him in April, 1783. And it is not only certain that he always claimed it as his own, but, considering the singularly modest and unboastful disposition of the man, it is really marvellous how frequently, and with what complacency, he dwells upon and brings it forward. His language throughout is, 'Dr. Priestley has made certain experiments, *and* '*I have found out what they mean*,—or have founded a theory on 'them.' Thus, in his letter to Black, of 21st April, he says, 'Dr Priestley has made more experiments, &c., *and I believe I* '*have found out the cause*,—which I have put in the form of a 'letter to him, to be read at the Royal Society.' And then, after mentioning the experiments, he adds, 'Are we not, then, 'authorised to conclude *that water is composed of dephlogisti-* '*cated and inflammable air*, deprived of part of their latent 'heat?' (Muirhead's Correspondence, pp. 18, 19.) To Mr. G. Hamilton, in like manner, he writes on the day after (April 22.), 'Dr. Priestley has made many discoveries lately as to the con- 'version of water into air; *and I have, from them, made out* '*what water is made of, and what air is made of*,' &c. And, again, in writing to Smeaton, on 27th April, 'By the help of 'Dr. Priestley's discoveries *I have attempted to demolish two of* '*the most ancient elements—air and water*. For particulars I 'refer you to a letter of mine to Dr. P., which he is to read to 'the Royal Society.' To De Luc, in the same manner, on the 26th,—'You will have seen Dr. P. by this time, and heard the 'account of his discoveries in the *air* way; *and of my attempt to* '*give a reason, or theory*, for the conversion of water into air. I 'shall just mention *what I attempt to prove from his experiments* 'viz. (inter alia)—*that water is composed of pure air, deprived of*

'*part of its latent heat, and united to phlogiston,*' &c. And, still more emphatically, to Mr. Fry, of the 28th April, 'Dr. P. con-'verts water into air, and air into water; *and I have found out* '*the reason of all these wonders; and also what air is made of,* '*and what water is made of: For they are not simple elements.*' And then he gives a receipt for making both these compounds, which could not well be mended at the present day.

There can be no doubt, in short, that, from the very first, he openly claimed this discovery as his own; and we have already seen in what way he afterwards resented its supposed piracy by others, and the firmness with which he continued to assert it through every period of his life. If he is a credible witness, therefore, there can be no doubt that his testimony must settle the question; since he could not *possibly* be mistaken, as to his having either formed his conclusions for himself, or borrowed them from another; and we know not where to look for an insinuation against his credibility. From whom, indeed, could he possibly have borrowed these conclusions? Lavoisier confessedly did not begin *his* experiments till late in June following, nor admit the conclusions from them till some time after; and the very earliest date that can be assigned to any revelation of his theory by Cavendish, is in that conversation with Blagden and some other particular friends, in spring, 1783, and 'just about 'the time' when Watt's account of his views had become an article of scientific news in London. This we shall afterwards show, must have been long subsequent to his formation of that theory at Birmingham; and, at all events, there is not a vestige of evidence — nor indeed any allegation — that the import of this private conversation was *ever* communicated to Watt; and much less that it was so communicated before his theory was formed.

The only other person, then, from whom it could have been borrowed was Priestley; and, accordingly, it has been recently suggested that because Priestley says, in one passage of his paper of April, 1783, that some of the experiments there detailed '*seemed to afford a strong presumption* that the air 'was *re*converted into water,' the theory must be held to have originated with him; and that all Watt's merit consisted in following up the philosophical and cautious suggestion of his friend, by a rash and confident assertion of his own! To those who knew any thing of the two men, the surmise must seem merely ludicrous. But it would not be easy, we hope, to find a man of any description, who, after witnessing the experiments of a friend, and being trusted with his theory, or explanation of them, should immediately turn round and claim that theory as his own, in letters addressed to the common

associates and correspondents of both, and actually refer them to the plundered individual for the particulars of what had been so basely appropriated. But even this would be venial and conceivable, compared with what must be believed of Watt, if he had really borrowed his theory from Priestley: For, by far the most decided assertion of his claim to it as his own, is contained *in a letter addressed to Priestley himself*, and coupled with a request that he would procure it to be read to the Royal Society, under the title of 'Thoughts on the Constituent Parts of Water, 'and of Dephlogisticated Air, by James Watt, Engineer;' and with this request Priestley at once complies, and enlarges to De Luc on the bold speculation of their engineering friend!

But the whole notion of his having borrowed any part of this theory from Priestley, palpably extravagant as it is in itself, is fortunately contradicted under the hand of Priestley himself; for, within a few days after he had received Watt's paper, having blundered upon a new experiment which he fancied inconsistent with Watt's conclusions, he sends him an account of it (29th April), and says, with that cordial and open-hearted familiarity which gives a charm to their whole correspondence, 'Behold, with 'surprise and indignation, an apparatus that has utterly ruined '*your* beautiful hypothesis!' To which Watt immediately answers, in the same strain of thorough good understanding, 'I 'deny that your experiment ruins *my* hypothesis: it is not founded 'on so brittle a basis,' &c.; and afterwards, in the same letter, 'I 'shall maintain *my* hypothesis until it shall be shown that the 'water formed after the explosion has some other origin,' &c. When we find, indeed, in the letter in which Priestley transmitted his own paper to Sir Joseph Banks, that he expressly disclaims all pretensions to *theorise* on the facts he communicates, we must be satisfied that he and his friend perfectly understood each other as to the parts which they were respectively to sustain in the investigations with which they had been occupied; and that, in assigning only the experiments and observations to Priestley, and taking the theory or interpretation of them exclusively to himself, in the way we have seen in the preceding extracts, Watt merely followed out the arrangement on which they had previously agreed. Priestley's words in that letter are, 'The principal '*facts*, I think, are sufficiently ascertained; though *I do not* '*presume to give any opinion with respect to the theory of them.*' And, in the body of the paper itself, he again says, with more immediate reference to the mutual convertibility of air and water, 'All *the facts* I shall state may be depended on; but it 'is probable that *different persons may draw different conclusions* '*from them*, and to mere *opinions* I have never been much

'attached.' And, accordingly, when reverting, two years after, to those speculations of 1783, he takes care, in a paper read to the Royal Society in 1785, to give Watt the sole credit of the theory of which we are now speaking; and accurately to distinguish between his own *experiments*, and the *conclusions* deduced from them by his friend — in exact conformity with that partition of credit, or of labour, which Watt had publicly adopted at the time. '*Mr. Watt*,' he says, '*then concluded, from some experiments of which I gave an account*, and also from some observations of his own, that water consists of dephlogisticated and inflammable air; in which Mr. Cavendish and M. Lavoisier concur *with him*.' After all this, is it possible to doubt that the expression referred to in another part of the paper, as to the experiments 'affording a strong presumption' of the truth of this theory, was never intended to imply that Priestley had himself originated that theory, or even been struck with the force of that presumption; but only that, after it had been suggested by his friend, he could not but acknowledge that there were some probabilities in its favour. We may now assume, therefore, we think, that Watt was, at all events, an original and independent discoverer of the theory which he propounded in April 1783.

But then comes the graver question — What, in reality, was that theory? And, did it present a true explanation of the nature and composition of water? And this, we fear, may give our readers a little more trouble.

At first sight, however, there would seem to be no difficulty. Watt's theory, or explanation, as we have seen, is in terms, that 'water is composed of dephlogisticated and inflammable air,' — or, merely varying the phrase, 'of dephlogisticated air and phlogiston' — inflammable air being either pure phlogiston, or phlogiston 'combined with a small quantity of water;' and both Cavendish's explanation and Lavoisier's, which are allowed on all hands to be correct, are expressed in *the very same terms*. Cavendish's is, that 'water consists of dephlogisticated air united to phlogiston — and that inflammable air is either pure phlogiston, or water 'united to phlogiston;' and Lavoisier's, that 'water is composed of vital air (admitted to be the dephlogisticated air of 'the English) and inflammable air,' — in certain proportions. It may seem difficult therefore to maintain, that these last explanations are right, and that Watt's is wrong.

But *there is* a colour at least for the objection: Lavoisier distinctly explains, that when he uses the term 'inflammable air,' he means only that which is obtained by the oxidation of zinc or iron in diluted mineral acids, and rigorously limits his conclusions to the results of *its* combustion: and Cavendish, though he does not

express, or, as we think, at all contemplate any such limitation, undoubtedly states that the inflammable air, which *he actually used* in his experiments, was of this description. But Watt makes no such statement or explanation; and, as it is certain, on the one hand, that it is only *this* kind of inflammable air (or hydrogen) which does form water by its union with dephlogisticated or vital air (now oxygen); and, on the other, that Priestley, from whose experiments alone Watt draws his conclusions, did not use *this* inflammable air in some of the experiments mentioned in his paper, but air of another sort, obtained by heating *charcoal* in close vessels; so, it is contended, he could not *possibly* have obtained the results, which he (unaccountably) supposed he had obtained, and reported to Watt accordingly; and, consequently, that Watt's conclusions, being founded on an assumption of non-existing and *impossible* facts, or on mere mistake and imagination, can never be received as a true explanation of anything, but must fall to the ground along with the supposititious experiments upon which it was founded. This is now the form of the objection: And, as it is the only point of the case that is not discussed, either by Mr. Muirhead or Sir D. Brewster, and constitutes by far the most plausible ground for questioning Watt's claim to the true theory, we must be excused if we now go into it with some little care and anxiety.

And, first of all, we must be understood as fully admitting the chemical proposition, or fact rather, affirmed by Mr. Harcourt as the basis of this part of his argument, viz., that no air obtained by the application of heat to charcoal could possibly be *wholly* converted into water by its combustion with oxygen; but, on the contrary, that no part of such air could be so converted, except what truly consisted of hydrogen, evolved from the water adhering (though unsuspected) to the charcoal which was burned; and this, we are assured by Mr. Harcourt, would not amount to more than *one fifteenth part* of the gases employed. We do not exactly see where he got that particular proportion. But, resting merely on the admirable experiments of Dr. Henry in 1805, we admit it to be clear, first, that on burning any proportion of this charcoal gas with oxygen, scarcely less than *two-thirds* of the airs must have remained unconverted into fluid—either in their original state, or in that of carbonic acid or carbonic oxide in a gaseous form; and, second, that the small portion of water that might be formed from the carburetted hydrogen evolved in the operation, could not have been *pure water*, but largely impregnated with carbonic acid. It is upon these admissions that we proceed to consider the objection.

We shall have a good deal to say to *the Logic* of it by and by;

but we must first of all demur to the assumption, in *point of fact*, on which it is wholly dependent. That assumption is, that the only experiments from which Watt drew his conclusion were those made with this gas from charcoal, to which Priestley refers in his paper; and it seems admitted, that if Priestley had made, and shown or reported to Watt, other experiments with the proper hydrogen, which might certainly have given the results which he specifies, there would have been nothing to say against the accuracy, any more than against the originality of that conclusion. Now, looking at the whole of the evidence before us, we have come to be satisfied that Priestley *had*, in point of fact, made, and shown or reported to Watt, such other experiments; and that, though it may be somewhat difficult to account for some expressions which he uses in speaking of his charcoal experiments in that paper, it would be *immeasurably more difficult* to believe that there were no other experiments with hydrogen; and that those two gifted individuals were the dupes and victims of an *hallucination*, without parallel or precedent in the history of the human understanding.

We cannot, in short, but believe that there were other experiments made, with hydrogen; and this for a great variety of reasons. First of all, the whole series was professedly entered on as a mere repetition of those of Cavendish, which were made exclusively with that substance; and it seems inconceivable, that when the main object was to test their accuracy, he should not have *begun* at least, with the same materials. But the main proof that he did so begin, is to be found in the details of the experiments which Watt has himself minutely described as those on which his conclusion was founded; and which are far more marked and precise than any which Priestley has given as belonging to his trials with the gas from charcoal. Watt himself, it must be remembered, nowhere says anything of the employment of such a gas; but tells us merely of *certain results* which Priestley had obtained by the combustion of oxygen and 'inflammable air:' — And it is absolutely necessary, therefore, that we should shortly recapitulate what these results were — premising only that there can be no possible doubt that Priestley had actually told him every thing that is thus reported on his authority — since by far the greater part of the details are contained in letters addressed and delivered *to Priestley himself;* and the whole openly read, and afterwards published in the Philosophical Transactions — with Priestley's full assent and approbation — it being anxiously and repeatedly set forth in all these letters and publications, that the whole of these details had been derived from his (Priestley's) information, and were given solely upon his credit.

Now, the most material of these details are, First, that as early as March 26. 1783, Priestley had told him that 'he put 'dry dephlogisticated air and dry inflammable air into a close 'vessel, and fired them by electricity — *that no air remained* '*when both were pure*, but that he found on the sides of the 'vessel a quantity of *water*, equal in weight to the air con-'sumed.' Now, this is the very experiment, shortly recited, from which, a few weeks after, Watt intimated that he had drawn his famous conclusion; and we have now only to ask whether these results, or *any thing at all like them*, could have been produced if the gas from charcoal, or any thing but hydrogen, had been the inflammable air employed? Secondly, on the 21st April Watt writes to Dr. Black *and to Priestley himself*, informing the one, and *reminding* the other, that he (Priestley), after firing the dephlogisticated and inflammable air as above, and opening the close vessel over mercury, found that the mercury rose and filled the vessel '*to within one two hundredth part* '*of its whole contents*,' and that there was a quantity of water 'equal, or nearly, to the weight of the whole air employed.' Thirdly, that some time before 28th April Priestley had also told him that, in order to form water, 'you should take of pure 'or dephlogisticated air *one part*, and of phlogiston (or inflam-'mable air) *two parts by measure*, and fire them by the electric 'spark.' Fourthly, that before 18th May, Priestley had also told him, 'that the water remaining after the explosion *is not in* '*the least acid*.' (Cor. p. 30.) Fifthly, that Priestley had also told him, before the 21st April, that, by heating the *calces* of metals with 'inflammable air,' they were reduced to the metallic state, the air being absorbed (or disappearing) 'so completely, '*that only two parts out of one hundred and one, remained at the* '*end of the operation;* from which he had inferred that this 'inflammable air *was the thing called phlogiston*.' (Cor. p. 19., and Watt's paper, p. 79. M.) Now, *it is certain*, from the detailed account of this very experiment, given by Priestley himself, in his paper read to the Royal Society, that the inflammable air there used was the *proper hydrogen:* he expressly describing it as '*air extracted from iron by oil of vitriol*' (Phil. Trans. vol. 73. p. 402.); and it was *this* inflammable air, therefore, and nothing else, that he and Watt were led by this very experiment to consider as 'the thing called phlogiston.'

But, sixthly, in Watt's own paper, given in to the Society in November, 1783, and subsequently printed in their Transactions, he distinctly states that 'according to *Dr. Priestley's* '*experiments*, dephlogisticated air *unites completely* with about 'twice its bulk of *the inflammable air from metals* — the inflam-

'mable air being supposed to be *wholly phlogiston.*' Now, this is a separate and distinct experiment from that in which the *calces* of metals were reduced by the same agent; and is, therefore, a second and additional proof *what sort* of inflammable air both these philosophers considered as identical with *phlogiston*, and on account of what properties they so considered it. It is still more material, however, to observe, that though we now know that water must have been actually formed in *both* these experiments, it was very likely to have escaped observation in the first of them; partly because it could not have been looked for, the chemists of that day being ignorant that oxygen was evolved in the course of it, and believing that the disappearance of the hydrogen, which was truly occasioned by its uniting with the oxygen, and forming water, was owing to its being actually absorbed by the metal; and partly because, the experiment being (apparently) performed over water, the whole of that which was thus produced, would be swept away as soon as it was deposited, by the rising of that at the bottom of the receiver. But in the *second* experiment, where *both* airs had been carefully put together in *the proper proportions for forming water*, and were found to 'unite completely,' or be mutually absorbed, it seems impossible to doubt that the formation of water must have been expected, and consequently observed: and, accordingly, though very briefly recorded, we find that it was so; for, in the very same paragraph, and at the distance of only four lines from the words we have cited, the learned author proceeds: — '*Therefore*, one 'ounce of dephlogisticated air will require 120 grains of inflam-'mable air, or phlogiston (that is, unequivocally, of *hydrogen*) '*to convert it into water!*' These last words being merely the rendering into the equivalent proportion of *weights*, the proportion of *bulks* set forth at the outset — but, beyond all question, referring to the same substances, and to the same effects of their combination; the import of the whole being, that, as Priestley had found that one *volume* of oxygen *completely united* with two of hydrogen (and of necessity formed water), it therefore followed, from the known relative *weights* of the two airs, that, when the proportion was taken *by weight*, one ounce of oxygen would require 120 grains of hydrogen '*to convert it into water*' — that conversion being plainly here taken as *a mere synonyme* for the 'complete union,' or mutual absorption, mentioned at the beginning.

After this statement, can it be seriously doubted that Priestley had effected the complete union of 'the inflammable air 'from metals' (or proper hydrogen), with the fitting proportion of oxygen, and formed water by the union? It is quite true

that the whole of this last passage is introduced incidentally in Watt's paper, and that his immediate object in that part of it was to estimate the quantity of *heat* produced by the union of *certain weights* of these and other gases: and it was to facilitate this investigation, and, especially, to enable him to compare the results of his own observations with certain experiments of Lavoisier, that he was induced to end by expressing *in weights* those proportions of the airs employed, which, in reference to the actual course of the experiment, he had begun by specifying in *measures*. But will this at all derogate from the positive statement *in point of fact*—that Priestley had found that one volume of oxygen *united completely* with two of hydrogen; and, *therefore* concluded—merely taking the same proportion in weights—that one ounce of the one air, and 120 grains of the other, must have gone into *the water produced by their union?*

We have dwelt longer, however, on this last experiment than was at all necessary for our conclusion. For, after the details we have just given, it appears to us that there is no alternative left, but, *either* to believe that Priestley *had made* the experiments, and obtained the results, from his report of which Watt drew *his* conclusion; in which case it is agreed, upon all hands, that the inflammable air he used must have been hydrogen, and not a gas from charcoal; or, that the Rev. Doctor must, without any conceivable motive or interest, have imposed on his respected friend a series of the most deliberate falsehoods; and, also, had the effrontery to forward and abet their publication, on his authority, in the face of the gravest assembly in the land. There is no possible escape, we think, from this dilemma,—the case being far beyond help from any supposition of mere carelessness or inaccuracy. If the inflammable air used in the experiments reported to Watt, had been nothing but the gas from heated charcoal described in one part of Priestley's paper, then it is certain that its combustion with any proportion of oxygen must, in the *first* place, have left from a half to two-thirds, or even more, of the airs in their original gaseous form, and unconverted into liquid of any kind; and, secondly, that the liquid produced could not have been *pure water*, or anything like it, but water impregnated, probably to the extent of at least half its volume, with carbonic acid or oxide. Yet, he repeatedly tells Watt, and allows him to tell the Royal Society in his name, and in great detail, that on several occasions he had burnt two volumes of inflammable air with one of oxygen, and found that the airs disappeared *to within one two-hundredth part of their original bulk;* and left in their place a quantity of water,

'*which was not in the least acid;*' and was equal, as near as could be judged, to the weight of the airs consumed.

When the *particularity* of this statement, especially as to the proportion of air left unconsumed, is considered, and the importance attached to this circumstance by both the parties concerned, it is obviously altogether impossible to account for it by any mere hastiness or want of accuracy in the observation. If he had merely said that 'a great part, or proportion,' of the airs had disappeared, some such apology might have been admitted; but it is absolutely excluded by the terms of his actual statement; where, instead of any such loose or vague generality, he distinctly intimates the employment of an apparatus graduated to a *bicentenary* scale, and reports, with perfect confidence and precision, that the quantity of the air which remained was *exactly one two-hundredth part* of its original bulk; the fact being, that if his inflammable air was from charcoal, the residue must have been at *least one-half or two-thirds* of that original bulk. The supposed *mistake*, in short, is just such as a surveyor would make, who, being employed to ascertain the exact height of some object, for scientific purposes, should report it as exactly ten feet four inches, when its real height was upwards of three hundred! And if such a mistake would at once be pronounced *impossible*, we cannot see what other epithet we can apply to that which is here imputed to Priestley. If his inflammable air, however, was that *from the metals*, there is no difficulty in the case; and when we find him dealing familiarly with *that* air, in experiments involving the very same results, and ascribing to it exclusively, an identity with *phlogiston*, it would require some strong reason indeed, to make us doubt that it was actually employed in the experiments now in question. It is, as if we had found out for our surveyor, an object really ten feet four inches in height, in the same locality, and known by the same general name, with that which he was supposed to have so *incredibly* mismeasured.

Upon what ground, then, is it that Mr. Harcourt now requires us to reject this plain and natural explanation, and to believe that the only experiments touching this matter ever made by Priestley, or reported to Watt, were made, not with hydrogen, but with this charcoal gas; and, consequently, that so acute and so truthful a man as Priestley had either made the *impossible* mistake, or been guilty of the *inconceivable* falsehood, of which we have now been speaking? Now, *the only ground* for this strange assumption confessedly is, that, as Priestley had stated in his own paper of 1783, that he had burned this charcoal gas with oxygen, in one or two experiments, instituted, as

we think, for a very limited and peculiar purpose, and Watt's letter was originally intended to have been read about the same time with that paper, so it must be assumed that the only experiments to which Watt refers were those particular experiments.

We have seldom seen, we think, a more rash or unwarranted assumption. Watt himself makes no mention of this charcoal gas; and nowhere refers to this paper of Priestley's as containing the experiments on which he proceeded; but states *these* for himself, in very minute and particular detail. There is not an atom of evidence, indeed, to show that before writing his letter he had ever seen this paper; which was not read in London till 25th May, 1783, nor printed till the very end of that year; and we think it by far most probable that he knew nothing of its particular contents till after that publication. It is a great and fundamental mistake also, to suppose that the main object and subject of *that* paper was the same, or even very much connected with that of Watt's letter. Its first and longest division consists of a dissertation on the nature of 'Phlogiston' generally; and the other, on 'the supposed convertibility of water into air;' by which he explains, he means into the common air of the atmosphere. Almost the whole of the experiments detailed in it, accordingly, are referable to this *analytical* process; and there is but a slight notice, extending in all to little more than a page, of the *synthetical* proceedings of Cavendish, and the few experiments he had himself made in connection with them; not so much, we think, to test or confirm the general results reported by Cavendish, as to eliminate one particular source of possible error. Watt's letter, on the other hand, professed only to embody his own 'thoughts on the constituent parts of water;' and had, therefore, no material bearing on the general disquisition of Priestley's. He had plainly received a full and complete account of all the experiments on which his own conclusions were founded, some time before the 26th of March; and therefore before either his own letter, or Priestley's paper of 21st April, were written; and had no occasion, therefore, to look to that paper, or concern himself about its contents, in order to prepare that exposition of his important theory, which he then proposed to make public. He had, of course, long before, communicated largely with his learned friend and neighbour on the nature of that theory; and made himself minutely acquainted with every material particular of the experiments on the faith of which it was grounded; and our own firm conviction is, that he had been distinctly told, and told truly, that all those experiments in which the quantity of missing air was carefully measured, and the freedom of the water produced from acid, ascertained, were made with the *inflammable air from the*

metals, or the *hydrogen* of our modern technology; and that, if any mention at all was made between them of the employment, in later experiments, of the gas from charcoal, it was only for the purpose of showing that the (supposed) *perfect dryness* of that air did not interfere with the general success of the processes. And, that this was truly the course of the experiments, and the sole object of those with the charcoal gas, we think is substantially proved by Priestley's own account of those last experiments.

From that account, we think, it may plainly be gathered that he *had begun*, as was most natural, by repeating Cavendish's experiments with the same materials which that great chemist had employed, and had obtained the same results, from the combustion of the proper proportions of the inflammable air from metals with oxygen; and that it was in these first experiments that he found the airs disappearing to within one two-hundredth part of their bulk, and the water produced free from any mixture of acid; and gave an account accordingly of these results to Watt—though he did not again detail them in his own subsequent paper to the Royal Society. But after completing this repetition of Cavendish's experiments—with more success, it appears, than Cavendish himself—it seems to have occurred to him, that if he only used inflammable air which had been got from diluted acids, and been received over water, the quantity of that fluid, obtained from it after combustion with oxygen, might be alleged to have been dissolved or suspended in it from the beginning; and not actually *formed* by the combustion, but only *deposited* in consequence of it. And, in order to test the value of this suggestion, he appears to have bethought him of trying the experiment anew, with air which had never been in contact with water at all; and accordingly obtained it from what he conceived to be *perfectly dry* charcoal, and received and burned it over mercury; and finding that water was still produced by the combustion, he was confirmed in his faith, whatever it was, in his former experiments. That he had made such former experiments, and that this was the sole object of this variation in the form of them, is apparent, we think, from his own distinct account of it. 'In order to be sure,' he says, 'that the water I might find 'in the air was really a constituent part of it, *and not what it might* '*have imbibed*, in or after its formation, I made a quantity of 'both dephlogisticated and inflammable air in such a manner, as 'that neither of them should *ever* come into contact with water, 'and received them, as they were produced, over mercury; the 'former from nitre (long after the water of chrystallisation had 'come over), *and the latter from perfectly made charcoal.* 'These two kinds of air I decomposed by firing them together

'by the electric explosion, and found a *manifest deposition of* '*water*, to appearance, in the same quantity as *if both the kinds* '*of air had been previously confined by water:*' These last words are of importance, as clearly showing that he had previously employed airs obtained from watery solutions, and first collected over water, in similar experiments; and was quite familiar with the results of such experiments. But the material thing is, that there is no statement *here* of the disappearance of the airs to within one two-hundredth part, or any other proportion of their original bulk,—no statement, even, of the relative quantities of each exposed to the combustion—no statement as to the purity or acid condition of the water produced, and no measurement or examination of the air left after the explosion. All those things, however, he had previously stated to Watt, with peculiar and almost ostentatious minuteness; as the results of experiments, on which, and on these particular results, he knew that Watt had constructed a theory; and soon afterwards read with approbation, and gave in to the Royal Society, that letter of Watt's to him, in which all these particulars are recited on his authority, and as the necessary elements of the theory which is there propounded. He could not but know, therefore, that they were most vital and indispensable in any discussion as to the composition of water; and yet he does not say one word in relation to them, in what, we are now required to believe, is the only trustworthy account of the experiments on which Watt really proceeded!

If that account had truly related to those experiments, or been intended to affect the credit, either of Watt's theory or his *data*, this would have been quite unaccountable. But if it had only the limited object we have now indicated, its nakedness and imperfection in these respects may very well be explained. Priestley implicitly believed, though we now know quite erroneously, that in these last experiments he was operating with perfectly *dry*, or, rather, absolutely *anhydrous* substances; and, therefore, if in the course of them *any air* disappeared, and *any water* was produced, there was the same reason to believe that the airs were converted into water, as if the doubt he proposed to remove from his former more elaborate experiments had never been suggested. If there was *absolutely no water* within his close apparatus when he began his experiment, and *some water* and *less air* was found in it when he ended it, *that* was enough to prove that the water so found had been *formed* and not *deposited;* and the *credit* of the original detailed experiments was equally well established, whether the water now found was pure or impure, and whatever proportion the air remaining after the combustion might bear to the volume originally exposed to it. It is very true, that

if the water was impure and unexamined, and the quantity and quality of the residuary gases unknown, it might remain to some extent doubtful, what were the *particular constituents* or ingredients of the water produced, or their relative proportions: But the cardinal fact that it was *produced*, and not merely *deposited*, would be as irrefragably proved, as if all these things had been ascertained. And it is most material to remark, that in the very slight and superficial notice he here bestows on Cavendish's *synthetical* experiments, Priestley had no occasion, and, with a view to his own *analytic* theories, probably no great inclination, to inquire into the ultimate constituents of water. His great object at this time, and the avowed aim of his paper, was to show, or render it probable, that water might be converted into *atmospheric air;* and the only interest he took in the synthetical process, which he always terms 'the apparent *re*-conversion of 'air into water,' was best satisfied by merely finding that it afforded a strong probability that airs, or gases, *of one kind or another*, might form water by their combination. For, according to his own cherished views, the airs which might be expected to effect this were, *not* oxygen and inflammable air, but oxygen and phlogisticated air, or azote, the actual and then known constituents of our atmosphere; and, though reporting faithfully to Watt the actual results of his own first experiments, he might not be unwilling to leave it doubtful, on the last, whether charcoal or some other phlogistic body might not enter into the composition.

It is very true, also, that though none of the particulars above mentioned are stated in Priestley's account of this experiment, he does say, generally, that the water produced had, 'as 'nearly as could be judged, the same weight with the airs de-'composed.' But as we are not at all informed what proportion of the whole airs employed *was* decomposed, the statement is really of no importance; and could not, indeed, be otherwise than true, if, as Priestley certainly supposed, there was no water in any of his ingredients, and *some* air was missing, and *some* water present at the end, while the weight of the whole apparatus was unchanged: And, on the whole, therefore, we think we are fully justified in saying, that there is nothing in this account of the experiments with charcoal gas which can detract from the evidence we have already brought, of the existence of other experiments with hydrogen; and the truth of that account of *their* results, upon which, undoubtedly, Watt exclusively founded his conclusion — a conclusion which, if that account was true, is now admitted to have been as correct as it was original.

But though we think it thus clear that Watt, in point of fact,

proceeded upon real experiments with hydrogen, and a true report of them by Priestley, we do not wish to dissemble that his views of the grounds of that conclusion, and the nature of his great discovery, were somewhat obscured and embarrassed by his unlucky adhesion, along with Black, Kirwan, and Cavendish himself, not only to the phraseology, but the mystical doctrine of the Phlogistic school. We admit, too, that in consequence of this he, as well as Priestley, and the still more eminent men we have named, were contented to be substantially ignorant of the nature and composition of the different inflammable airs with which they were acquainted; and, probably, believed, in general, that they were fundamentally the same — being, in fact, but so many embodiments of their wonder-working and all-pervading phlogiston. But it is quite in vain for Mr. Harcourt to represent Cavendish as having in any degree freed himself from the trammels of this bewildering superstition; since nothing can possibly be more certain, than that the real and avowed creed, both of him and of Watt in 1783, was, that water was composed of oxygen and *phlogiston*, and nothing else; these, indeed, being the very terms in which each of them described his discovery, when particularly anxious to do it with precision: and as to Mr. Harcourt's very strange and confident assertion, that, whatever sense others might attach to the word, 'Cavendish's phlogiston 'was certainly nothing but hydrogen,' we must say that we do not recollect to have met any where with a more rash or unwarrantable allegation. If the words employed by these two great men respectively are looked at, this is far more true of Watt than of Cavendish. For, while Watt says distinctly, in all his original letters from March till November, that the inflammable air with which Priestley reduced the calces of metals (and which we know to have been hydrogen), and 'the inflammable air 'from metals' (which was then its proper appellation), which he found to unite completely with oxygen, is 'phlogiston itself,' or 'the thing called phlogiston,' Cavendish only says, that 'inflammable air is *either* pure phlogiston, as Priestley and 'Kirwan suppose, or *else water united to phlogiston*; the 'last being the most likely.' But their theory of the composition of water is at all points identical. Watt's announcement of it being, that 'water is composed of dephlogisticated air 'and inflammable air, or *phlogiston*, deprived of latent heat;' and Cavendish's, that 'water consists of dephlogisticated air *and phlo-* '*giston:*' and, indeed, he has himself expressly recognised this identity, in the addition to his paper, made after Watt's letter had been read to the Society, where he says, 'as Mr. Watt in his 'paper supposes water to consist of dephlogisticated air and *phlo-*

'*giston* (the precise words of his own definition), deprived of part 'of their latent heat, whereas I take no notice of *the latter cir-* '*cumstance*, it may be proper to mention the reason of *this ap-* '*parent difference between us;*' thus distinctly intimating that there was no other difference; as, indeed, there could not well be, while he was describing Watt's conclusion in the very terms which he had just before employed to express his own.

Nor will this identity be in the least disturbed by Cavendish's holding that some portion of water probably went to the composition of his inflammable air; while Watt originally maintained that *his* was 'pure phlogiston.' For, first, Watt afterwards fell off from his original orthodoxy, and came to concur in this venial heresy of Cavendish's (though without knowing that it had the sanction of such an authority); and secondly, this peculiarity in the views of one or both of them as to the nature or constitution of hydrogen, could not in the least affect the identity of their opinion, as to the water produced by the combustion being composed of oxygen and *phlogiston alone*. For, though that mysterious element might require to be combined with water, in order to assume the gaseous form, and this might even be the only form in which it was known to unite with oxygen, so as to form more water, it is not to be imagined that either of these acute reasoners could ever have intended to say, that this combined and pre-existing water actually entered into the composition of that which was afterwards *formed*; or, that it was anything but merely *deposited*, when the oxygen entered into combination with the *pure phlogiston* which that water had formerly diluted, and formed *additional water* by the union of these simple substances. If this was a heresy, therefore (as it certainly was, if hydrogen can exist without any mixture of water — which M. Arago thinks not quite certain), it was one in which Cavendish not only had his full share, but, according to Mr. Harcourt, actually led the way; but, at all events, it did not in the least derogate, either from the substantial truth, or the perfect coincidence of their opinions as to the composition of water — both of them holding positively that it was really composed of oxygen and phlogiston alone; though they might also say, without much impropriety, that it consisted of oxygen and hydrogen; inasmuch as they were both satisfied that hydrogen was nothing else but either pure phlogiston, or phlogiston combined with a little water; and was the only known form in which they could be sure of its uniting with oxygen so as to produce water. There might be a little laxity in leaving this alternative open; but it did not affect the substance of the discovery; and, beyond all doubt, was equally chargeable against both the present competitors.

Mr. Harcourt, to be sure, would appear to think otherwise; for on the strength of this very harmless generality, he insists very strenuously that Watt made no distinction between one inflammable air and another, and would as readily have believed water to be formed by the combustion of any of them with oxygen, as of hydrogen; from which he infers, that he cannot be held to have discovered, 'or even understood' the true secret of its composition. The inference, as we have just intimated, appears to us wholly unwarranted. But, in so far as regards Watt's supposed ignorance of the particular difference between hydrogen and other inflammable airs, and the probability of his believing water to be producible from any of them, we do not know that we can conscientiously give a positive contradiction to the impeachment: And, if Mr. Harcourt were now trying to make a case for Lavoisier and his associates, the objection founded on it might require to be answered. But the present competition is only between Watt and Cavendish; and in such a question we cannot but think it enough that it is an objection as applicable at least to the latter as the former. *He also* says, merely that water is composed of oxygen *and phlogiston;* while he is far less confident than Watt as to the absolute or exclusive identity of the inflammable air he employed with phlogiston; and as he, too, certainly recognised the existence of phlogiston in other inflammable airs, there is precisely the same reason for presuming that he would have admitted their fitness to form water on combustion, as for imputing that latitudinarian opinion to Watt. — But with this very material difference, that, while it is but matter of *conjecture* that Watt (assuming that he had founded his conclusions on experiments with hydrogen) would have admitted, without careful investigation, that gas from charcoal would answer as well, *it is matter of record, under his own hand,* that *Cavendish* did, in point of fact, make this very admission; and considered the allegation as in itself so very probable, and so conformable to his own general views, as at once to accept it as certain — upon a most vague and imperfect statement, from a quarter which his advocates now say was entitled to very little authority. We allude, now, to those same charcoal gas experiments of Priestley of which we have said so much already, and as to which, in an addition made to his paper after that of Priestley had been printed, he says, that, having mentioned his own experiments to Priestley, 'he, in consequence, made some 'experiments *of the same kind,* as he relates in a paper now 'printed in the Transactions;' thus admitting that experiments with an inflammable gas from charcoal were, *quoad hoc,* to be regarded as *of the same kind* with those made with an inflammable

gas from metals; and, indeed, from what he says immediately after, not only *as* likely, but more likely, to produce pure water than the other. For he proceeds, and concludes the passage as follows: 'It is remarkable that Dr. Priestley *did not find any* 'acid in the water produced by the combustion: *which might* 'proceed from his having used a different kind of inflammable 'air, viz. *that from charcoal*, and, perhaps, used a greater pro-'portion of it.' Mr. Harcourt is imprudent enough to refer to this passage; as showing that Cavendish knew that there was a difference between the charcoal gas and hydrogen: And so, no doubt, there must have been, in some respects: But nothing can be so plain as that, in regard to its fitness for being burned into water with oxygen, he considered it as not only as good as that which he had himself employed, but as decidedly better; as at once giving water of a purity which he was not able to attain without a great deal of trouble; as effecting a reduction of the whole airs employed to just one two-hundredth part of their original volume, while he could never make a less residue than one fiftieth; and also, as more completely excluding all doubts as to the general truth of his results, by its superior *dryness:* So that, on the whole, we have little doubt that he rather regretted that it had not been substituted for hydrogen, in his own experiments. But, at all events, there must now be an end, we think, of any attempt to distinguish between *his* imperfect knowledge, and consequent liability to error, and Watt's; since, in everything that relates to their common belief, that water was composed of *oxygen and phlogiston*, and all the perils and imputations to which that belief might expose them, they were manifestly *in pari casu*—or with some advantage on the part of Watt.

We have already said that, with reference to the present competition, we think it immaterial to consider the amount of those perils; or the weight due to an objection that applies equally to both parties; but having also stated that, if advanced on the part of Lavoisier, it might have been entitled to some notice, we are not disposed to take advantage of the late generous concessions of that great chemist's illustrious countrymen, or to leave the just claims of our own fellow-citizens undefended, against what we know is still regarded by some as a plausible attack; and shall venture, therefore, to say a word or two in their vindication.

The objection, then, is, that by neglecting to limit the constituents of water to oxygen and *hydrogen gas*, exclusively, and only defining the latter ingredient as *phlogiston*, they left its true composition in some measure doubtful; and could not have refused to admit that any other inflammable gas might answer the purpose as well. Now, the first question is, whether they were not sub-

stantially right in the doctrines thus imputed to them? And the next, what was the extent and nature of their error, if they were wrong? And as to the first, considering in what sense they are proved to have used the unlucky word phlogiston, and by what tests they judged of its presence, and also the actual nature of the inflammable airs with which they were then acquainted, we scarcely think it going too far to say that they were substantially right in their propositions — though unfortunate, no doubt, in the now obsolete phraseology in which they were led to express them. Whatever may have been the notions of the earlier chemists, we know that Kirwan had recently come to satisfy himself and most of his contemporaries, that phlogiston might be best defined as the substance or principle by which the *calces* of metals were reduced to their metallic state, and which disappeared and was absorbed (as all then believed) in the course of that operation; and it was undoubtedly by experiments of this kind, in which *hydrogen* was thus employed, *and totally disappeared*, that he convinced Watt and Priestley, and, we think, Cavendish also, that *hydrogen* '*was phlogiston itself*,' 'pure phlogiston,' or '*the thing* called phlogiston,'—as we have already abundantly seen: And, although it was afterwards suspected that it might also contain a little water, there cannot be the least doubt that all the results, either in reducing the metals, or afterwards in forming the water, were all along ascribed to *the phlogiston alone;* and that if its water was discarded, or found not to exist, all that was predicated of phlogiston might, with equal propriety, be predicated of hydrogen, as its synonyme, or most familiar embodiment: and if the fact now be, that it contained no water, then, Kirwan's and Watt's original conviction that it was phlogiston itself, is merely cleared of the temporary doubt that had been thrown on it, and hydrogen may fairly be read in every passage of their writings where phlogiston now occurs.

And even with regard to the other inflammable airs, as to which it is merely *conjectured* that our philosophers might have been led to admit them to the same prerogatives as hydrogen, it is first of all to be observed that, according to their own principles, they could not have been so imposed on, unless it had been credibly testified, or rather (if they were duly cautious), unless they had themselves ascertained, that these gases also could reduce the *calces* of metals, and disappear in the process: And if this *could not happen* to any gas but hydrogen, it is plain that there could be no such actual misleading. But the more material thing is, that all the inflammable gases then known were not only held to contain phlogiston, but did, in point of fact, *all of them contain hydrogen*—and owed their inflammability entirely

to that circumstance. Even now, we think, there are but two such gases that do not contain it, viz., cyanogen, which was utterly unknown till long after 1783, and carbonic oxyd, which, though it might have presented itself to chemists at an earlier period, had never been recognised as a separate substance, till the experiments of Cruikshanks, in 1801, nor properly investigated till those of Henry, in 1805. Our discoverers of 1783, therefore, would not have committed any great error in thinking it probable that water might be produced by the combustion of the other inflammable airs then known to them, in respect of the phlogiston, otherwise hydrogen, which they were (rightly) believed to contain; and by means of which they *would* all, in point of fact, have produced a certain proportion of water. It is far from certain, therefore, that there was any real error in the supposed laxity of their definition of the second constituent of water.

But if there had been such a laxity, and if, in consequence of it, their definition of the composition of water was not absolutely precise, is it therefore to be held that they had not really made the great discovery they claimed? or not established the grand, startling, and most prolific fact, that Water was now cast down from its old Elemental throne, and ascertained to be a compound of two other substances, which had hitherto ranked in a diverse and alien category? They had, in point of fact, converted two known *aerial* substances into a known *liquid* of equal weight. They had made the one totally to disappear, and called the other into a new existence in its room. They had finally ascertained the exact description of one of these two bodies; which was then, and has ever since been, regarded as a simple and elementary body. The other, Watt at least, originally considered in the same light; and accurately described, under the alternative names of inflammable air, or phlogiston, as the body which disappeared in reducing the calces of metals, and which he and Kirwan had ascertained to be identical with the inflammable gas from metallic solutions, and to unite completely and be entirely absorbed in one half of its bulk of oxygen: And, though he afterwards thought it probable, as Cavendish seems to have done from the beginning, that in the form in which he obtained it, there might be some mixture of water, neither he nor his competitor ever departed or varied from any particle of this plain description, or left it possible for any one to doubt what this second ingredient of water actually was, and by what tests it might always be distinguished. At the very worst, therefore, their definition was loose only in so far as it seemed to admit of *an alternative* in the ultimate *denomination* which should

be given to that second ingredient. It was hydrogen and nothing else, if hydrogen contained no water, and was consequently the *pure* phlogiston; but if it did contain water, then it was that phlogiston which was so largely combined with that water; and which might, perhaps, be detected and recognised in other combinations, by the clear and infallible *criteria* to which we have just adverted.

There is nothing whatever, therefore, as it appears to us, in this supposed objection to the precision or absolute completeness of Watt's announcement of his discovery; and though it may be true that, after hydrogen was proved (or supposed proved) to contain no water, and the name and nature of phlogiston had ceased to perplex mankind, the terms of that announcement were simplified and abridged, there is evidently nothing in this that can at all detract from the merit of his grand achievement.

Take an analogous case in any of the other sciences. The studious observer and bold reasoner who first made out that our earth was a globe, achieved, we must take leave to think, a great and magnificent discovery. But could it derogate from his claim to our admiration, or entitle us to deny that he had, in effect, *ascertained the true figure* of our planet, because it might appear that he did not exactly know whether it was a *spheroid* or a *perfect sphere?* — or even erroneously believed and announced that it was the latter? Is *Newton* to be deprived of the glory of having discovered the true system of the universe, or the composition of light, because later astronomers and philosophers have supplied some of his omissions, restricted some of his generalities, or even imperfectly answered some of his sublime and immortal Queries?

These last views, however, are really extrinsic to the present argument; and we trust that, quite independently of them, we have now sufficiently made out that, in spite of Priestley's unlucky charcoal experiments, Watt did, in 1783, substantially discover, and distinctly announce, the true composition of water. We have already somewhat exceeded, we fear, in this exposition; and yet we are tempted to try the patience of our readers by one other, more popular and elementary view of the question; And we are the rather moved to venture on this, from our firm conviction that, if the controversy is not now settled (which we confess we can scarcely hope, while Mr. Harcourt is alive, and a new Life of Cavendish in preparation), *this* is the ground upon which the opponents of Watt will hereafter insist on doing battle; and which those who are convinced of the justice of his claims may therefore be excused for wishing to strengthen, with even unnecessary defences. But we hope to secure this par-

ticular position without occupying a great deal of ground; and propose too, to maintain it by the mere force of plain reasoning from admitted facts — altogether undisturbed by the noise and smoke of that Scientific Enginery which we have been obliged both to employ and to demolish, in the earlier stages of the combat.

We show our confidence, at all events, in its strength, when, in order to possess ourselves of it, we surrender, for the moment, all our other works to the enemy. We are now willing, accordingly, that Mr. Harcourt should assume that Priestley never experimented except with charcoal gas, and had told this distinctly to Watt; but that he had dreamed dreams and seen visions! or had purposely imposed on his friend, by detailing to him all the *impossible* results of these experiments, with which we are now so familiar; and that Watt had given implicit credit to this communication, and upon the faith of it had put his conclusion into the precise form, that *this gas from charcoal* was the true phlogiston, and, along with oxygen, the only constituent of water: — even then, and upon these suppositions, we venture to maintain that, though fundamentally mistaken as to the capacities of this gas, yet, if there was in existence another gas, which did possess, and was known to possess, those very capacities, the conclusion would, in reality, have been just as true and valuable, and the merit of making it as great, as if there had been no mistake in the matter. And this, we think, must be apparent, as soon as it is considered that the conclusion did not rest in any degree on the denomination, internal constitution, or actual properties of the gas which happened to be employed, but solely on the results *said* to have been obtained by its employment; and that its whole merit consisted in the sagacity and intellectual courage which had interpreted, and deduced *from these results*, an inference which had escaped all other observers, — and was pregnant with consequences of the greatest possible importance. The discovery was, *not* that gas from charcoal, or gas from metals in diluted acid, was, with oxygen, the sole constituent of water, but that *a* gas, or *any* gas which disappeared on the reduction of metallic *calces*, and which, being burnt with half its bulk of oxygen, also disappeared, and was replaced by pure water equal in weight to both airs, *must, by reason of these properties*, be such a constituent; and that all water, therefore, *must be* a compound, and made up of these ingredients. The names of the gases, or rather of one of them, its actual constitution, or the manner of its preparation, are quite immaterial to the merit or the justice of this conclusion; and, obviously, could never have been taken into consideration in the course of the intellectual process

through which it was reached. And accordingly, if Priestley, or a more trustworthy reporter, had merely told Watt that he had obtained those particular results by using two well-known gases, which he *neither named nor described*, Watt could have reasoned and concluded as to these *anonymous* substances, just as certainly as if they had been minutely described to him, or as if he had himself seen and assisted at their formation. But if it required no name or description to supply *data* for the reasoning, or give value to the conclusion, why should a mistake of the name, or an unaccountable assignment of the actual properties of one gas to another (which is truly the same thing), have any such effect?

To be sure, if there was no gas in existence which really had the properties in question, and no possibility, therefore, of actually obtaining the results that were stated—if the whole was a mere dream or imagination—the reasoning and conclusion might both be held to have gone very much to waste; though, as a mere hypothetical and prophetic anticipation, we are not prepared to say that they would have been without their value. But, in the case before us, we know, not only that there was a gas with these properties, but that the very results, upon the assumption of which Watt founded his conclusion, had been actually and repeatedly obtained by Cavendish; and if neither Cavendish nor any one else had drawn that conclusion (which for the present we assume), was it not as true and just a conclusion, from the moment it was formed, as if Cavendish and not Priestley had given a true, and not an imaginary account, of the experiments, and had come to Watt for their interpretation? Though the experiments actually reported to him might not have been such as were represented, still *there were experiments* of which that would have been a just representation; and, if the definition of a true theory is that which gives the true explanation of actually existing and known phenomena, how can it be disputed that Watt was, in April 1783, if not before, the author of the true theory which is now the subject of competition?

But, if the actual merit of the discovery is plainly the same, whether the *real facts* explained by it were truly reported as having occurred to the immediate informer or not, we cannot but think it equally plain that the *proper date* of such a discovery must be taken as of the time when it was actually made, upon the belief and assumption of these facts, and not of the time when their reality was afterwards made known. To make this clear, let it only be supposed that Priestley had been experimenting *both* with hydrogen and with the gas from charcoal, and had got the results already specified (as he could only have done) from the use of the former; and that, being at a loss how

to account for these appearances, he had written a full report of them to Watt for his opinion, but, *by mistake*, had described them as having been obtained *by the charcoal gas*, and stated that the experiments with hydrogen had produced nothing remarkable; and that Watt had answered, with the decision of his bold and penetrating genius, 'I see you are not aware of the 'great feat you have been performing. You have, *without* '*knowing it*, completely proved that water is not a simple, but a 'compound body; and may now go forth and proclaim, upon my 'authority, that it consists of one part of oxygen and two of the '*gas from charcoal*.' This, we imagine, is pretty much the answer which Mr. Harcourt supposes may really have been made to such a communication — believing, as he does, that Watt held this charcoal gas to be pure phlogiston. But, before adopting his estimate of its value, we must take our hypothetical correspondence a stage farther on; and suppose that Priestley had made the following reply, a week after: — 'I thank you for your solution of my 'difficulties; but it is really so bold and startling, that I cannot 'bring myself at once to adopt it — though I do not clearly see 'how it is to be answered. It is right, however, to correct a 'little mistake I fell into in my last. It was with the *hydrogen* '*gas*, and *not* that from charcoal, that I obtained the results I 'have mentioned. But that, of course, can make no difference 'on your conclusion.'

Now, as Mr. Harcourt must admit, that, applied to the true state of facts, though only mentioned in this last letter, the conclusion was a just and correct one, we should like to know *at what date* he would hold that just conclusion to have been drawn? To us it appears that there can be but one answer; and that it must be held to have been drawn, with all the truth and all the merit that could ever belong to it, at *the only time at which it was drawn at all;* viz., immediately on the receipt of *the first* letter, which alone contained the results on which it proceeded, and thus stimulated and gave rise to the only mental effort which the consideration of them ever produced. If there was no true discovery made at that time, then it is plain that none was ever made at all; For the correction of the name of the gas was wholly the work of Priestley; and Watt was entirely passive in all that followed after his original rescript. He might have *died*, indeed, before hearing of that correction; and his merit and claim to the discovery would, notwithstanding, have been just as good as if he had lived to glory in it for a century. It is enough, in short, that he *gave a true and original interpretation of facts which had really been observed;* though in the account of them which had reached him, they were connected with wrong sub-

stances. The soundness of his reasoning was not in the least affected by *that* error; and the magnificent conclusion which he drew from a series of actually existing and well observed phenomena, could lose nothing of its value by his having erroneously supposed that they had occurred in manipulating one sort of materials instead of another. *There*, at all events, was the bold and happy conclusion — ready to be applied to the phenomena in their true connection, on the one hand; and *there* were the true phenomena — ready and waiting for its application, on the other.

But if the matter would be clear in such a case as we have supposed, could it possibly make any difference that the true experiments had been made by Cavendish, and not by Priestley? or not made known to Watt till longer than a week after he had announced his theory? In both cases, the results on which alone the theory was founded, had all of them been correctly ascertained before that true solution of them was proposed; and in both, the author of the solution had all along believed them to exist, though in connection with other substances than those from which they had really been obtained: and this being the case, of what consequence could it be, whether the proof that these were true results, was ultimately furnished by the same person who had occasioned the mistake, or by a different person? or whether it was furnished at the end of a week, or of a year?

To illustrate this we shall venture on one other familiar illustration. Assuming that Cavendish had concluded his experiments in 1781, but without drawing any conclusion, and that Priestley, experimenting only with charcoal, had made the erroneous report, already specified, to Watt in 1783—let us only further suppose that Watt, when consulted as to the interpretation of these wonders, had given the response, and expounded the theory we know of, not in the form of a letter, but at a personal interview with Priestley, *at which Cavendish happened to be present!* Could that learned person have avoided feeling that *his* experiments, too, had then been for the first time interpreted? or hesitated in his own mind to acknowledge that, though applied *in terms* to substances of a different description, the theory then propounded solved all the difficulties, and connected all the phenomena occurring in his observations? or would it have at all affected this conviction, although he had then known that Priestley's charcoal gas *could not* have afforded the results on which Watt proceeded — as long as he also knew that his own hydrogen *had*, in fact, afforded them; and that Watt's theory was a true and original explanation of well-ascertained, and hitherto unexplained, appearances? But we will not be tempted to pursue this course any further. We can see no answer to this last view of the question; nor any

escape from the conclusion to which it leads; and must, therefore, conclude, that Watt would have been entitled to the credit of having discovered and announced the true theory of the composition of water in April, 1783, even if it were proved that he had believed all Priestley's experiments to have been made with charcoal, and been consequently misled as to the actual results of *those* experiments. It is enough that there were *other* experiments, which verified all his *data*, and justified all his conclusions.

Besides his grand heresy as to the gas from charcoal, Mr. Harcourt indulges largely in what we cannot but consider as mere cavilling, on another topic, which seems to have won almost as much of his favour. Because Watt had long cherished a notion that water, or rather steam, might be made to assume a permanently gaseous form, if it could only be subjected to a very high heat, and had consequently taken an interest in Priestley's endeavours to convert it into atmospheric air, Mr. Harcourt will have it, that it was solely in the hope that it might assist those endeavours, that he first adopted his conclusion as to the actual composition of water; and that, when discouraged in *that* expectation by a blundering report of Priestley's supposed failure in his object, he had substantially 'laid aside his theory, as not 'borne out by the facts,' and never afterwards resumed it with any confidence or satisfaction.

From the correspondence already cited, it will be seen how totally *opposite*, the latter part at least, of this representation is to the fact; how stoutly he maintained, to Priestley himself, that his supposed failure to turn water into air had no tendency to discredit *his* theory of its synthetical composition; how much he afterwards resented the supposed piracy of that theory by others, and how steadily he asserted his claim to it to the very end of his days. But it may be right to say a word or two of Mr. Harcourt's more radical mistakes, as to this matter.

As early as December, 1782, Watt writes to Black (Corr. p. 6.), that he had long been of opinion, that, if steam could be so compressed as to abide a great heat, 'it would change its state, 'and become *something else* than steam, or water; my opinion is, 'that it would *then become air.*'* The notion, however, though

* Mr. Harcourt is pleased, throughout, to treat this as an ignorant fancy of Watt's; and accordingly thinks he both disables his judgment, and discredits his theory, when he attempts to show that it took its origin in so crude and unscientific a notion. We suppose, however, that he has heard by this time, of those remarkable experiments of Professor Grove, of which an account was given to the British Scientific Association at its meeting of 1846, by which this bold, and yet

plainly much cherished by him, had as yet taken the form only of a very cautious and general anticipation; which would have been equally satisfied, either by finding that water merely passed (as still a proper and simple *element*) into a new, or fourth state, analogous to those it assumes in its three familiar forms, of ice, water, or steam,—or by its *decomposition* into a plurality of known or unknown gases. While his views were in this unsettled and immature state, it is easy to understand with what interest he would listen to Priestley's reports of those multiform experiments by which he thought he had effected the conversion of this most ancient element into atmospheric air—a conversion which necessarily implied that it was a compound, and not a simple body; as Priestley himself had by this time ascertained that the atmosphere consisted of a mixture of *two* separate gases—and had even gone far to determine the proportions in which they met in that compound. Now, it is perfectly true, that it was while watching the progress of these *analytical* researches that Watt's attention was first called, in the beginning of 1783, to those *synthetical* experiments, upon which he founded that great conclusion, to which we think it manifest that he adhered with unwavering firmness, and unabated confidence, through every period of his life; and, therefore, it was quite natural for him to say, in the passage cited by Mr. Harcourt, that 'he had first thought of 'that way of solving *the phenomena*, in endeavouring to account 'for an experiment of Dr. Priestley's, in which water appeared 'to be converted into air.' The *phenomena* here mentioned are, beyond all doubt, those produced by the combustion of oxygen and inflammable air; and the meaning obviously is, that, as

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modest anticipation, was signally and precisely realised. Mr. Grove having actually decomposed steam into its constituent gases by the application of heat alone; effecting this, in one set of experiments, by bringing the steam or water into contact with a surface of platinum raised to a white heat, and in another by merely passing the electric spark through the steam confined in a close vessel. We cannot help regarding this unexpected verification of one of his earliest speculations, as a new and striking proof of the profound and prophetic sagacity of the philosopher of Birmingham; and a well-timed testimony to the value, even of those less matured suggestions of intellects like his, of which men like Mr. Harcourt think it becomes them to speak lightly. We take the account of Mr. Grove's paper from the 'Pharmaceutical Times' for Sept. 1846; but there is an excellent paper on the subject by Dr. Geo. Wilson, in the 'Memoirs of the Chemical Society' for 1847, p. 332., in which that distinguished chemist does not fail to remark on the new lustre which the discovery throws on Watt's ingenuity.

Priestley's former experiments suggested the notion that water might be analysed into two airs of a particular description, it naturally paved the way for the conclusion, that the true explanation of *the later* experiments was, that it was a compound of two airs, though of a description somewhat different. That nothing more than such a general suggestion was intended, must be apparent, we think, on the slightest consideration. For Watt's theory, or 'way of solving the phenomena,' was precisely, that water was compounded of oxygen and hydrogen — or, if Mr. Harcourt likes it better, oxygen and pure phlogiston: But Priestley's *analytical* processes went to show, that it was composed of oxygen and nitrogen; and as it cannot possibly be pretended that Watt ever held that nitrogen was either hydrogen or pure phlogiston, or, in other words, that *the principle of inflammability* was identical with a substance by which flame was instantly *extinguished*, it is palpably absurd to suppose that he could have held the literal verification of *that* analysis, either confirmatory of his own theory, or even in any degree consistent with it. At the same time, he must have been aware, that, if the analytical proof could in any way be reconciled with, or really brought to bear upon the synthetical, the demonstration would be more obviously complete, and the triumph more conspicuous in the eyes of the world: And he would therefore have been very glad, if, by some modification of Priestley's former experiments, such a conclusive confirmation of his own theory and early anticipations, could yet have been obtained. When he heard, therefore, that Priestley had seen reason to doubt the accuracy of those experiments, it was most natural for him to expect that something might come out of a more careful repetition of them, which might supply the corroboration required; and (being quite unaware of any impending competition) thought it well worth while to wait a while, for the chance of being able to offer an analytical, along with this synthetical proof of the true composition of water.

But that his synthetical account was in no other way connected with, or *in any way dependent on*, the analytical, and was originally drawn up with no reference to it, except to *disclaim* all such dependence, is fortunately fully proved by the tenor of that original account in the letter of April, 1783, now embodied in the paper printed in the Transactions. In the passages of that paper, marked by inverted commas, *there is no mention whatever* of Priestley's attempts to convert water into air; and *the only reference* to the analytical process which occurs in it, is the following: — 'For many years I had 'entertained an opinion that air was a modification of water;

'and this led me to conclude that when a very *great degree* 'of *heat* was necessary for the production of steam, its latent 'heat would be wholly changed into sensible heat; and that, 'in such a case, the steam itself might suffer *some remark-* 'able change. But *I now abandon this opinion, in so far as relates* 'to the change of water into air — as I think *that may be ac-* 'counted for on better principles.' (Watt's paper, MS. p. 85.) Now, this was written on or before the 21st April, 1783 — *before* Priestley had discovered the imperfection of his attempts to convert water into *atmospheric* air, and while *this* was the only conversion which had ever been submitted to Watt for his consideration: And the plain meaning of the whole passage is, that as such a conversion fell in with his own early impressions, he had, at one time, been disposed to believe in it; but that, having now become satisfied that the real constituents of water were *not* those of the atmosphere, but gases of a different description, he abandoned that opinion, and felt that the identity of water and air must be rested on different assumptions, or, as here expressed, might be accounted for on better principles.

Such, accordingly, were the terms in which he originally wished this letter to be read, in April, 1783; and such were *the terms which he left unqualified and unaltered*, when he finally renewed his application for its reading; though, in the interval, and while Priestley's notice of his miscarriage had raised an expectation that an *analysis* might yet be made, not contradictory of his own *synthetic* theory, like that former one — but confirmatory of it — he had directed the reading to be delayed; which, however, on the disappointment of that expectation, ultimately took place, without any change being made. The true analysis, to be sure, though but little expected at the time, came soon after — from the hands of Lavoisier; and *was*, of course, confirmatory of the preceding synthesis. But it was by no means necessary to warrant Watt's confidence in the conclusion which he had founded on the synthesis alone. Chemical combinations, it is well known, are not like mechanical conjunctions, where whatever is put together may be taken asunder. There are many things, on the contrary, which we can analyse, and yet cannot recompose; and some, which we may compose, and yet be unable to resolve again into their elements. But the composite nature of the substance examined is quite sufficiently and independently established, if *either* the synthesis or analysis is satisfactorily accomplished.

We have seen, then, that Watt was an original discoverer; and that his discovery was clear and complete. And these are, truly, the only things that should affect our estimate of his personal merits, or our sense of the greatness of his genius. The

remaining topics, as to his mere *priority*, touch only his good fortune or his fame; and may be far more shortly discussed. The first is, Was he, at all events, the first to *announce* this discovery? the second, Was he also the first, or even *the only independent* discoverer?

As to the announcement, the chapter needs be very short; For the facts are few, and the inferences obvious. It is certain, from his letter to Hamilton (p. 17. of Cor.), that in March, 1783, Watt had intimated his perfect acquaintance with the whole of the phenomena on which his discovery proceeded; and, from subsequent letters (pp. 18. 20.), that on the 21st and 22d April he distinctly communicated to Black, to Priestley himself, and to Hamilton, the whole particulars of that discovery. On 26th April, that account was sent to Priestley, in London, with instructions to present it to the Royal Society; and was by him accordingly delivered to the president — but not till *after* he had shown and read it 'to several of the members;' which must, therefore, have been done within a short time after he received it, and, most probably, about the end of that month or very early in May; which may be taken as the date of its general publication, though there had been separate provincial announcements enough at a still earlier period. Now, there was no such *publication* of Cavendish's rival claims, till January, 1784; and no written record whatever of his having advanced them, prior to that publication: and the only shade of doubt that can be thrown on Watt's priority of announcement rests, therefore, *entirely* on Blagden's report, in his letter to Crell of 1786, of an alleged *verbal* communication by Cavendish to him, and some other 'particular friends,' 'in Spring, 1783;' and 'about the time when the news of Watt's 'discovery came to London,' and 'shortly before' Blagden went to Paris, in June after, as already noticed. Now we do not at all doubt that some such communication was made; and the whole question is, at what time? — whether before or after Watt's *publication* of the end of April? — or before or after his separate communications to Black, Hamilton, and Priestley, some time before?

We cannot, of course, take the strange intimation that the two claims were made 'about the same time' to signify that they were actually made at the same instant. It is plain enough that *that* could not have been the case. One certainly must have been made before the other; and Blagden *could not but know* which of them was first. That he should have left the matter thus ambiguous seems unaccountable, when the nature of the question at issue is considered — and, we must say, not a little suspicious also, when the relations of the parties are remembered. It is painful

to us to say any thing that may have even the appearance of being invidious towards the memory of a dead man; but it is impossible, on such an occasion, to forget that Blagden was at this time the pensioner and dependent of Cavendish. He had quitted his profession, to act as assistant in his laboratory, and was, in fact, substantially dependent on his friendship and bounty. We do not believe that he would, on this account, have uttered a deliberate falsehood, to favour any interest of his benefactor; and still less that Cavendish would have stooped to suborn such a testimony. But we do not think we show any lack of charity when we say, that if here was any fact within his knowledge, and which plainly lay in his way, by the statement of which his patron would be gratified, or his reputation advanced, it is to us inconceivable that he should have omitted to make that statement. And yet this is the predicament in which he appears to us to stand. It has been said, indeed, that his only object in that letter was to vindicate Cavendish's priority in *respect of Lavoisier;* and that he was not then aware of any possible competition with Watt. But it is plainly impossible to accept that explanation. The mere mention of Watt's name, in the way in which the force of truth —and his consciousness of what was known to 'other particular friends'—compelled him to mention it, at once invested him with the character of a competitor: And when he admitted that the news of Watt's conclusion had come to London about the very same time with the first revelation of Cavendish's, he must have seen that he had already recognised his right, at least to *divide and share* the honour of the discovery with Cavendish; and that it wholly depended on the fact of their *relative* priority which of them was entitled to by far the largest share. That he, the client and partial friend, to say the least, of Cavendish, should have been willing to let their shares *appear equal*, will be conclusive proof, with most people, that he very well knew that a more exact apportionment would have been any thing but favourable to his patron. But it is not the less certain that such an apportionment was due—to truth, to science, and to the parties themselves,—and also that Blagden had the means of making that apportionment; and we fear we must add, that he studiously *evaded* making it! He must have known perfectly whether he had first heard of this conclusion from the one or the other; and if he had first heard it from *Cavendish*, is it possible to doubt that he would have said so? After mentioning the actual communication by that gentleman, it is almost impossible that he should not (in that case) have introduced his notice of Watt's, by saying, 'Soon 'after this;' or, if it came *very* soon, 'Almost immediately

'after.' Even if nothing depended on the priority, this was the natural and almost inevitable way of connecting the two notices, if they had really reached him in that order.

But he could not be ignorant that a great deal depended on it. He could scarcely fail, we think, to have heard of Watt's early complaints and jealousies of Cavendish, from his own intimate friends, Kirwan and De Luc, with whom he is proved to have been in communication on the subject. But, at all events, he must have been perfectly aware of Watt's anxiety to fix the precise date, and early reading of his own April letter to Priestley, for the express purpose of showing 'what his ideas were *at the time it* '*was written*;' for this motive is distinctly assigned in a letter to Blagden himself, dated in May 1784, and sent along with the note to the same effect, afterwards printed under Blagden's exclusive superintendence. Now we know to a certainty from the correspondence with De Luc already cited, that *the only* object of this anxiety was to fix the priority of his own communication of April 1783, to that of Cavendish's paper of January 1784; and it is not to be imagined that Blagden could be ignorant of the fact. It had been previously spoken out, however, and now stands on record in that *public* letter to Sir Joseph Banks, in which Watt makes *the first application* for having his letters to Priestley of 21st and 26th April, 1783, openly read to the Society. In that letter (of 12th April, 1784), he says, 'As *similar theories* have *since*, as I am 'informed, been *supported by philosophers of first-rate abilities*, 'I hope, *therefore*, that the Royal Society will excuse my 'troubling them by now laying before them my letter to Dr. 'Priestley *unaltered*.' And then follows the relative explanation to Blagden, of his anxiety to show what his ideas were *at the date of that letter*, and the note inserted for no other purpose than 'to authenticate *the date* of the author's ideas.' With all this before him, is it possible to believe that Blagden did not, in 1786, see the vital importance of settling whether Cavendish's communication was after or before this carefully verified date of 21st and 26th April, 1783? or that it could possibly be, because he thought it of no consequence, that he chose to represent both communications as coming 'about the same time?'

It may also be observed, as pointing strongly to the same conclusion, that if Cavendish's communication was the first, its being followed *so very closely* by Watt's, as it must have been to justify this expression, cannot but be regarded as one of the most extraordinary, and, therefore, improbable coincidences (considering the new and startling nature of the discovery they respectively announced) of which there is any record in the his-

tory of science; whereas, nothing is so natural as their close succession, if Watt be supposed to have had the start. Assuming that Cavendish had actually drawn the same conclusion — or had a vision of it — *in private*, at an earlier period, he must naturally have been startled at the idea of being thus anticipated; and felt, that if he was not already too late for vindicating his own pretensions, he had, at least, no time to lose; and, at all events, would be led instantly to confer on the subject with his confidential assistant, and 'other particular friends,'—as he seems accordingly to have done. Upon the actual course and progress of the business, we think Kirwan's letter to Watt, already referred to, throws very valuable light; and shows, not only that Cavendish had the very earliest information of the import of Watt's letter to Priestley, but that he was Blagden's first informer in regard to it. It says, 'Lavoisier *certainly* learned '*your theory* from Dr. Blagden, *who first had it from Mr.* '*Cavendish;* and afterwards from your letter to Priestley, *which* '*he heard read;* and explained the whole minutely to Lavoisier 'last July; and *this he authorised me to tell you.*' Now the letter to Priestley was not *publicly* read till April 1784, and consequently the reading here mentioned (Kirwan's letter being dated in Dec. 1783) must have been one of those *private readings* with which we know that Priestley indulged 'several of the Fellows' on receiving it, in April 1783, and before first giving it in to the President. But, however early Blagden may have been admitted to such a reading, it is certain, from this distinct statement of Kirwan's, that *Cavendish* had had still earlier notice of this Birmingham theory; and had been in communication with his friend on the subject, even before the latter had seen the original letter of 21st of April in Priestley's hands.

But there is one other very obvious view of the case, which seems of itself to be conclusive as to Watt's priority of announcement. Upon the most favourable view for Cavendish of Blagden's unaccountable chronology, the two communications were made so nearly at the same time as to be almost indistinguishable in the recollection — on the same day, therefore, we must suppose, or certainly in the course of a few days, or of the same week. If there was a larger interval than *that*, it is absolutely inconceivable that they could have been said to have occurred about the same time. But what is thus represented as contemporaneous, is *the receipt, and rumouring abroad, in London* of Watt's conclusion, and the very first revelation of his by Cavendish to his particular friends. But this *London* disclosure of Watt's theory was by no means its first disclosure; having been preceded by written communications at Birmingham, of a

considerably earlier date. The letter which brought it to London was not despatched from Birmingham till 26th April, at the soonest; and we cannot suppose, that through the agency of a stranger in the great city, like Priestley, it could get to be talked about as an article of news, till after the lapse of some little time. It certainly was not then read to any meeting of the Fellows or other learned men; but merely shown severally, and successively, to such of them as came in the way of the possessor. It cannot well be supposed, therefore, to have become thus public before the very end of April, or beginning of May; about which very time we are assured Blagden received from Cavendish, in person, the very first hint of his having formed a similar theory. But at least ten days or a fortnight before this, on 21st of April, Watt had given a full written account of his conclusion to Black, Hamilton, and Priestley. So that if Cavendish's first disclosure of his own, was only made at the same time that Watt's came to be talked of in London, it is manifest that it must have been *posterior* to that very sufficient announcement which Watt had made in Birmingham a considerable time before.

But it is really idle to argue with apparent anxiety upon a point which we feel can now admit of no serious question among reasonable men; and which we are quite willing to leave to the judgment of our readers on the plain and broad ground which we stated at the beginning of this discussion. Blagden, the humble friend and dependent of Cavendish, in a paper professedly written for the purpose of vindicating *his* claim to priority over Lavoisier, and most probably at his suggestion and request, is yet found in every part of it to admit a third party to an equal share of the credit which may be obtained by his success; and to assign to Watt an undivided and indistinguishable moiety of the glory which is thence to accrue — he all the while necessarily and perfectly knowing, that in truth and justice their shares were not, and could not be equal, or any thing like equal; but that one of them must have been distinctly prior to the other, and so entitled to whatever prize might be due to the real winner in that honourable race. After mentioning the first verbal communication from Cavendish, he not only admits, that 'about the same time' it had come to be generally known in London that Watt had made a similar communication from Birmingham, but proceeds to maintain this conjunction and equalisation of the two claims through every part of his statement; making it, for example, the head and front of Lavoisier's offending, that he had suppressed the fact, 'that I had made 'him acquainted *with Messrs. Cavendish and Watt's conclusions,* 'viz. that water, and nothing else, arose from the combus-

'tion of these two airs;' and winding up the whole by stating, that Lavoisier had been induced to enter on the experiments which confirmed those conclusions, 'solely by the account he 'received from me *of our English experiments;* and had really 'discovered nothing but what I had pointed out to him, as having 'been previously made out and demonstrated *in England.*' The credit, in short, is throughout studiously claimed for *the firm of Watt and Cavendish,* as equal partners in the English concern. But he well knew that they were not so; and if, to his perfect knowledge, nine-tenths of the credit had really belonged to *Cavendish,* is there any one who considers the relation in which he stood to that party, who can believe that he would not have done him the *justice* of stating it? He did not so state it; and we are, therefore, satisfied, that this overbalance of credit did not belong to Cavendish. But if it did not belong to him, it *must* have belonged to Watt; and all the world, we think, must now be convinced that it did belong to him.

Watt, then, was an original discoverer of the composition of water; and was the first to announce it. Was he also the first to discover it? or was Cavendish before him with the discovery? or a true and independent discoverer at all? On one of these points there is no difficulty. If he was an independent and unassisted discoverer, he was, undoubtedly, a prior one; for his claim rests entirely on what he did, or wrote down, in 1781 and 1782; while Watt's theory was not formed till the year after. But there is unfortunately a doubt as to his having ever made any positive or original discovery at all.

The grounds of this doubt have been partly indicated in what we have just said as to the *réticences* of Blagden; but must now be a little further explained. They rest chiefly on the fact that, though as early as 1781 he had completed those experiments from which he *might* have drawn the conclusion which Watt actually drew in April 1783, from similar experiments of Priestley, there is not the slightest indication of it in the full contemporary record which he kept of the experiments themselves; that the very first intimation of it which he is alleged to have made, even to his own assistant and confidential associate, Blagden, was after news had come to London of Watt having formed a similar conclusion; and that, neither on that occasion, nor when it was more formally claimed in the paper read to the Royal Society in January 1784, nor in any of the important additions made to that paper before printing, nor in the letter which Blagden with his consent wrote to Crell in 1786, is there any thing like an assertion that he *had formed the conclusion at the time of making the experiments,* or at any earlier time than that at which the

announcements were actually made. It is needless to say what inferences are suggested by these facts: Nor how pregnant they are, though merely negative, with suspicions. Mr. Harcourt meets them by saying, that the experiments so plainly *involved* the conclusion that it was needless to express it; that Cavendish was far too acute to miss what lay so plainly before him; and of a nature too modest and retiring to make it at all wonderful that he should not have proclaimed his discovery on the house-tops, or even glorified himself upon it by a boastful entry in his journal. We shall speak to the leading proposition of this answer presently, but we must first request the attention of the reader to some of the particulars of the facts we have generally indicated.

Look, then, to the circumstances of the first alleged intimation made to Blagden, and other particular friends, early in 1783. We think it certain that it was not made till *after* both Cavendish and Blagden had heard 'the news' of Watt's earlier disclosure: but, even if this were doubtful, it is at least apparent from the terms in which it is made, that it was *the very first* that Blagden had received. His words are, that Cavendish then 'communicated to me, and other particular friends, the result 'of some experiments, &c., and showed us that out of them *he* '*must draw the conclusion* that water was dephlogisticated air 'united with phlogiston.' These expressions are remarkable:— not *that he had drawn*, but that 'he must draw;' that is, according to the plain and natural meaning of the words, that he must *now* draw, or had newly seen that he must draw, that conclusion. But can any other construction of the words at all account for the fact, that *Blagden* had never before heard of such a conclusion? Cavendish was no doubt shy and retiring in society, even to a morbid degree; and by no means eager or impatient in the pursuit even of scientific fame. But if he had one intimate and confidential associate in the world, that associate was Blagden; and we must say that it is to us not merely incredible, but *inconceivable*, that if he had actually made that splendid discovery in 1781, the authorship of which still agitates the learned world at the distance of sixty years, he should have kept, or been able to keep, the secret of it, even from his trusty laboratory assistant, for a period of two whole years — and only revealed it at last 'about the time' when a less reserved inquirer had already blabbed it to the world! That Blagden, however, had never heard of it till then, is manifest, we think, from the words we have already cited. But this is still more apparent when these words are taken in connection with the introductory sentence of the letter in which they occur, and which they immediately follow. He there says,

'I can certainly *give you the best account of the discovery*,' &c.; 'The following is a short account *of its history*. In spring, '1783, Cavendish communicated to me,' &c.; thus distinctly asserting, first, that he knew better than anybody the *true history of the discovery*; and then deliberately stating the *communication to himself, in* 1783, as the very first stage of that history of which he had any knowledge.

We are also disposed to think, that there is more in the absolute omission of any notice of this conclusion in the full contemporary journal of the experiments, than Mr. Harcourt is willing to allow. A discovery which has altered the whole course and aspect of the chemical and physiological sciences, might be expected to have obtained a passing notice, at least, in the most meagre and modest record that ever ascetic student preserved of his failures and successes. A very brief and simple entry would have been sufficient. If he had merely subjoined to the account of one of his experiments some such words as these: 'this water, therefore, must have been *formed* by the 'combination of the two airs, and not merely *deposited*, and, '*inde*, water is a compound, and not an element;' or if he had even stated in the detail of it, that the airs were *converted*, or *changed*, or *turned* into water, it would probably have been enough to have secured to him the credit of the discovery; as well as to have given the scientific world the benefit of it, in the event of his death before he could prevail on his modesty to claim it in public. That he was not quite so modest, however, or so indifferent to fame as willingly to run these risks, is abundantly certain from the course which he actually pursued. As soon as he hears of Watt's discovery, he immediately calls his friends together and announces his own; and then sends Blagden to Paris to warn the French chemists off the premises; and as soon after as possible, comes out with a long paper to the Royal Society, in which he very anxiously vindicates and asserts his own priority *to Lavoisier*; and notices and admits the rival discovery of Watt, without once insinuating that he is entitled to any such advantage *over him*. The whole tenor of that paper, indeed, we must confess, has impressed us with a strong belief that, though he might have previously contemplated that solution which Watt's genius afterwards so confidently gave of the phenomena, as one of the *possible* modes of accounting for them, he had not, in fact, attained any firm view or settled conviction on the subject, till encouraged and enlightened by that bold revelation — nor even, perhaps, till more fully confirmed in it by the nicer trials, and more expanded reasonings of Lavoisier.

Look only to the guarded expressions and singular omissions

of that elaborate paper. Mr. Harcourt's belief is, that the conclusion was simultaneous with the experiments; and there is, in truth, no room for any other view, on his side of the question. And yet, how remarkable is it, that not only is no such thing asserted anywhere in that paper, but that the assertion seems even to be studiously avoided; and expressions used that appear inconsistent with the truth of it, and certainly most unlikely to have been used, if such had been the truth. The words implying the conclusion are nowhere used in the *past tense*, or as referring back to the time of the experiments; but, like those afterwards reported by Blagden to Crell, indicative of a view taken up, or an opinion adopted, on a retrospect of those past experiments, and recently before this announcement of them. The expressions are all of this kind: 'by this experiment,' or, 'from the foregoing experiments, it appears,' that is, according to the natural reading, *it now appears*, to me, writing in January 1784: And so in the other instances: 'From this we may safely 'conclude,' 'I think we must therefore allow;' and, most remarkably perhaps, in what we may call his final summing up: 'From 'what has been said *there seems the utmost reason to think* that 'dephlogisticated air is only water deprived of its phlogiston; 'and that inflammable air is either phlogisticated water, or else 'pure phlogiston, but most probably the former.' Is it natural we would ask, or even conceivable, that a man should express himself in this way, as to a conclusion which he had actually drawn, without wavering or hesitation, three years before — and been accustomed for all that time to look back upon as absolutely certain?

But it is still more difficult to reconcile with such a supposition the passages about Lavoisier and Watt, inserted before the paper was printed in August 1784, and *after* he was fully aware of the doctrines maintained, and the pretensions set up, by *both* these philosophers. With regard to Lavoisier, the statement is clear and satisfactory enough; his *experiments*, he says, were mostly made in 1781, and mentioned to Dr. Priestley (not a word said here of any conclusion being then drawn from them); 'and *during last summer* a friend of 'mine gave some account *of them* to M. Lavoisier, as well as 'of *the conclusion drawn* (that is, which I had by that time drawn) 'from them, that dephlogisticated air is only water 'deprived of phlogiston,' &c. The statement, as we have glossed it, is conclusive as to his priority of announcement over Lavoisier; and if he could only have conscientiously extended it to Watt's claim, both to the announcement and the discovery, or either of them, we cannot at all comprehend how he should have

neglected to do so, by a mere continuation of the same passage. That he knew of Watt's pretensions at this time, and even recognised them as valid, is proved by the express notice of them, to which we are about to refer. But it is farther proved, by Kirwan's letter, and the plain implication of Blagden's statement to Crell, that he was fully aware of them from their first announcement in London; and must, therefore, have felt that he had as much (or greater) occasion to assert his own priority as to him, if it could only be truly asserted, as in relation to Lavoisier. Yet he evades making any statement on the subject; and, when he does mention Watt and his theory, it is without the smallest insinuation against either its truth or its *originality*, or the slightest hint that it had been in any respect anticipated by any discovery or announcement of his own — all that he says on the subject of it is in these very remarkable words: 'As Mr. 'Watt, in a paper lately read before this society, (also) supposes 'water to consist of dephlogisticated air and phlogiston, deprived 'of part of their latent heat, whereas I take no notice of *the* '*latter circumstance*, it may be proper to mention the reason of '*this apparent difference* between us;' and then he proceeds to say, that he does not himself believe in the existence of heat as a separate element, and thinks the notice of it in chemical definitions would be cumbersome, — and so takes a final farewell of the subject! thus distinctly recognising Watt as an original discoverer, and leaving him in unchallenged possession of, at least an equal right with himself, to the honours thereto belonging. As to him, in short, he claims no precedence or priority, of any sort, either as to discovery or announcement; but, knowing perfectly that Watt's paper had been read in London in April 1783, and his own not till January 1784, he yet neither fixes, as in the case of Lavoisier, on any earlier announcement 'in the spring' of that year, nor on any still earlier though undisclosed discovery, by which his own substantial priority might yet be established. All these things he now passes over in safe and submissive silence; though it is difficult to suppose that he should not have seen how that silence was likely to be interpreted. For ourselves, we cannot help adopting the obvious interpretation! nor avoid believing, that, if he could with truth have said, either that he had disclosed his own theory, or even fully formed it, before he had heard of Watt's, he *would certainly have said so* when the occasion was so palpably presented to him; and when he was actually availing himself of it to put down a less formidable competitor.

But all this, Mr. Harcourt assures us, is really of no consequence — for the experiments so obviously *involved* the conclu-

sion, that no man, with his senses about him, could possibly miss it. If the airs all disappeared, and an equal weight of water was found in their place, who could doubt that the airs were converted into the water? and what more would be learned by expressing this in a formal conclusion, than had already been taught by the simple statement of the fact?

Now, we do not deny that there is, at first sight, something plausible and taking in this view of the matter; especially when addressed to a generation which has always been familiar with the conclusion, and with the universal assent of mankind in the sufficiency of the evidence referred to. Yet it requires but a moderate acquaintance with the actual history of the progress, even of the most obvious truths, and of the tenacity and vitality of prejudices and errors, to make us cease to wonder at the incredulity with which what is at last felt to be demonstration, is often at first received *; or at the distrust with which even the authors of great discoveries have often regarded their own achievements. The truth is, that, in certain circumstances, it requires no common measure of sagacity and moral courage, to enable men to follow the dictates of their reason — or even to trust to the evidence of their senses! When long worshipped idols are to be cast down, the very detectors of the imposture may be seen to shrink on the threshold of the sanctuary: and the very men who delivered the world from its thraldom have sometimes remained in, or even relapsed into, the old idolatry. We of this age can have no notion of the consternation with which the Savans of 1783 must have received the announcement that Water was no longer to be regarded as an element! We doubt whether an alleged transmutation of Lead into Gold would, at the present day, be considered as more incredible. And

* To mention but two instances. The discovery of the *valves* in the veins, which were known long before Harvey's time, so obviously *involved* the necessity of the circulation of the blood, that Dr. Wm. Hunter could find no other way of explaining how the announcement of it should have been left to Harvey, than by supposing 'that Pro-'vidence meant to reserve it for *him*,' and therefore '*would not let men* '*see what was before their eyes, nor understand what they read.*' (Hunter's Introductory Lectures, p. 42.) Notwithstanding which, Harvey always said, that he never found a physician over fifty years of age, who would give any credit to his discovery. M. Arago thinks that the compound nature of *white light* was as plainly involved in the long known phenomenon of the Prismatic Spectrum; and that the memorable words in which Newton first stated it as a conclusion 'are 'truly nothing else than a literal description or translation of that 'familiar experiment.'

yet, if such a discovery as this were now to be actually made, we should like to know how many of our living chemists would listen to the report of it with anything but contemptuous incredulity; or how many would admit or believe in its reality, even after they had rigorously tested the experiments which appeared to establish it, without being able to find a flaw? The general impression, we think, would still be, that *there must be a mistake somewhere*, though it had not yet been detected; and the arrogant would scoff, and the thoughtful suspend their judgment accordingly. If the substances operated on were very small in quantity, we have not the least doubt that *this* would be the first fate of the discovery; and are firmly persuaded, that there would be no general acknowledgment of its truth, till the happy discoverer had repeatedly produced good ringing and well weighing pieces of the precious metal, from an apparatus which jealous spectators had seen charged with an equal weight of the baser material.

Now we think it well established by contemporary writings, that Watt's first announcement was actually met with just such a spirit of unbelief. De Luc writes at the time, that the Fellows who had heard his paper privately read, were generally disposed to *laugh at the idea* of such a discovery, and said it would prove another story of *the golden tooth!* They did not at all question the truth of the experiments. They merely could not stomach the conclusion. Watt himself, too, apologises in all his letters for what he fears will be considered as the excessive boldness of his suggestions; and has left it on record in that addressed to Sir Joseph Banks, that his chief reason for wishing to withdraw his paper for a while, was, that he understood his theory had been thought too bold to be propounded without more elucidation. But the case does not rest on these general indications: as there happen to be many conspicuous examples of what Mr. Harcourt is pleased to think impossible—the actual repudiation of Cavendish's supposed conclusion by those who fully admitted the truth of his experiments.

The single case of Priestley, to which we have already adverted, might, indeed, be sufficient for our purpose. He repeated these very experiments; and, as we have already seen, with more than their original success; and it was upon his report of them, that Watt actually founded his conclusion. Yet Priestley rejected that conclusion; and died an impenitent infidel! Why, then, should not Cavendish also have rejected it, or, at least, long struggled against its adoption? It is in vain that Mr. Harcourt cites a statement of Priestley's, in 1786, that he had never found '*the full weight*' of the airs employed in the water produced;

and seems to regard this as a justification of his unbelief. If it was so, Cavendish also might have had that justification; for he never pretends to have found *the exact weight* of the airs in the water; nor, indeed, could the processes he employed admit of such a precise verification. For he never actually took the weight of the airs with which he experimented; but merely *estimated* it, from their volume, and his assumed knowledge of their specific gravity; and was of course exposed to the hazard of far greater uncertainties than any supposed to be admitted by Priestley. But the truth is, that this supposed apology of Priestley's for his unbelief, was no apology, or even palliation, at all; since, if the whole contents of the close vessels were of the same weight at the end of the experiment as at the beginning, (and *this* is truly the only weighing relied on by Cavendish,) and there was air missing and water produced, while the residuary air was of the same *quality* as at first—the experiment was as complete, and the conclusion, as to the composite nature of the water, as well supported, without any weighing of the water, or *calculation* of the weight of the missing air, as it could be after both these operations. The only essential thing, besides the successive weighings of the vessels (and these, after all, could only prove their tightness, and the imponderable nature of light and heat,) was the *unaltered condition of the residuary air;* or the non-formation of any new compound, from which the water, as an element, might have been *deposited*. But if *that* cause of error was once eliminated, we really see no value in that supposed quantitative equalisation of the air and water, to which Mr. Harcourt ascribes so much importance; nor any merit in that anxiety, on Cavendish's part, to establish it, which he so highly extols; and think the conclusion might have been quite as well made out, without any relative weighings at all. Suppose a quantity, even an unknown and unmeasured quantity, of well-prepared oxygen and hydrogen, to be fired in a close vessel, and a large portion of the airs to disappear, and a sensible quantity of water to be produced, we hold firmly that, if the uncondensed air was found to be either oxygen or hydrogen *of the same quality as at first*, there would need no farther weighing or calculation to complete the experiment, and warrant the conclusion. Since, without caring or taking account of *any specific quantity of any thing*, from first to last, these phenomena alone would be enough to show that the missing airs had combined into the extant water; and that the weight of the one *must* be equal to that of the other, if that of the containing vessel was unchanged. The exact *proportion* in which the airs should be united to form water could not, indeed, be determined without some mensuration. But the grand problem, that water was a

compound, and these two gases its constituents, would be perfectly solved without it.

But this is a digression; and may even pass for a heresy. We only meant by it to show that Priestley had no colour or apology for his unbelief, that might not have been pleaded for Cavendish. But there is no lack of other distinguished recusants, who might have graced his first rejection or scepticism as to conclusions which Mr. Harcourt thinks must have been from the first irresistible.

Will he be satisfied if we place *Watt himself* — for a brief probationary period — on that list of recusants? For we do think that there was an interval, though no doubt a very short one, during which, with all the phenomena more vividly before him than *ever* they were before Cavendish, he, too, yet resisted or shrank back from the conclusion! In that terse and pregnant letter which he addressed to Mr. Hamilton as early as 26th of *March*, 1783, he says: 'Dr. Priestley puts dry dephlogisticated 'air and dry inflammable air into a close vessel, and kindles 'them by electricity. *No air remains, at least if the two were* '*pure.* But he finds on the sides of the vessel *a quantity of water,* '*equal in weight to the airs employed!* Yours affectionately, 'James Watt.' Now here, if any where, is a statement in which it might emphatically be said that the conclusion was plainly *involved* in the facts recorded. In point of precision, completeness, and apt juxtaposition of parts, there is nothing to be compared with it in all Mr. Harcourt's rambling and incoherent lithographed records. Here we have all the essentials concentrated and brought to bear upon each other in one view, as if expressly to *demand,* at once, and SUPPLY, a solution. Yet that solution is not given! and we must, therefore, hold, had not yet been clearly perceived. It had presented itself, no doubt, and was already fermenting in the powerful and capacious mind which had so clearly conceived, and so lucidly defined, the problem. But the fermentation was not completed, nor the term of incubation expired. Even the penetrating and intrepid spirit of Watt was baffled and perplexed for a season; and required time for consideration and circumspection before coming to a decision. The decision, to be sure, did come, as we know, within three short weeks after this date, and perhaps a good deal sooner. But still it was decidedly a period, in which the ardent and adventurous mind of Watt remained in a condition which Mr. Harcourt thinks it impossible for any sane mind to have been in for a single instant — a condition, that is, of clear perception and full knowledge of the phenomena, and utter uncertainty as to their true interpretation. But the difficulties which

thus held back a Watt for three weeks, might well have kept the colder and more timid nature of a Cavendish in perplexity for ever. 'Doubting Castle' was a sort of home to the one, in which he could pass his days in good comfort: to the other it was a hateful prison, from which he was sure to make a speedy escape, by force or by management. But there were many others who doubted much longer than Watt, and were not convinced even by what we allow at last convinced Cavendish.

Among the most remarkable of these we are disposed to place Monge, a chemist of the very greatest skill, learning, and ingenuity, who, without ever having heard of them, performed all Cavendish's experiments, with incomparably greater caution, accuracy, and diligence; carefully weighing the airs submitted to the operation, making a correct allowance for all barometrical variations occurring in the course of it, and examining and testing, both the water and the residuary air, with the most scrupulous minuteness. In this way, too, and by a long series of patient experiments, he produced a far greater quantity of pure water than had been procured either by Cavendish or Lavoisier; and yet he hesitates as to the conclusion which should be drawn from them, even after being made aware of the experiments and conclusions of those distinguished fellow-labourers. Nothing can be more instructive than the account which he gives of his own absolute indecision and philosophic doubt, in the close of that beautiful memoir which he dedicated to these subjects, and printed in 1786, in the 'Transactions of the Academy of Sciences.' He begins by stating, as the grand result of all his observations, that 'when oxygen and hydrogen are exploded together in proper 'proportions, the only products are, *pure water, light, and heat,*' and then proceeds,

'It only remains, then, to consider whether we should conclude that these two gases consist of distinct substances, dissolved in the element of heat, which, upon being fired together, escape from that common solvent, and by their union with each other produce water; which, in that case, can no longer be considered as a simple elementary body. *Or*, whether these gases consist of elementary water, dissolved in two unknown elastic fluids, which upon their combustion merely deposit the water, and unite to form the substances of *heat* and *light*, which escape through the sides of the apparatus, and which in their turn would be thus proved to be of a composite nature. *Both suppositions appear to be equally extraordinary;* and it *seems impossible to decide for either*, without many new experiments.'

After this it can, surely, be no disparagement to any one, that, though aware of all Cavendish's results, he was not prepared to adopt Watt's explanation of them. But there are

many more, and more confident dissentients. Kirwan, for example, the intimate friend and admirer of Watt, can only bring himself to say, in the end of 1784, that he is at last '*nearly* '*convinced*' that the water is really produced; and it is not till 1790, that Black, who had contented himself at first with saying that the results were 'very surprising,' gave in his tardy adhesion, acknowledging, in a letter of that date to Lavoisier, that he '*long* experienced a great aversion to the new system, 'which treated as errors what he had regarded as sound doc-'trine; but that this aversion, *caused only by the power of* '*habit* (what a testimony to that wicked power!) had *gradually* 'diminished and given way.' In like manner, Berthollet thought it necessary, so late as 1789, to dedicate no less than fifty pages to the refutation of objections to this very theory, which were still insisted on by other chemists (besides Priestley) of very considerable name; and candidly admits that he had himself rejected it 'longer than probably became a philosophy, which 'should raise us above those little motives which keep us bound 'down to all our old opinions.' But neither Berthollet, nor any of the sturdier heretics we have mentioned, ever questioned the accuracy of Cavendish's, Lavoisier's, or Monge's experiments; or had any more doubt of *the facts* they established, than those by whom they were respectively performed. Yet they all questioned, or positively rejected, their conclusions.

But the most signal instance of this strange resistance to the solicitations of importunate truth, is to be found, we think, in the eloquent account which Dumas has given in his *Leçons sur la Philosophie Chimique* for 1836, of the long judicial blindness of Lavoisier himself, in the early part of his investigations of this very subject; with a brief extract from which we shall close this concluding branch of our discussion.

'The formation of water,' he says, 'is actually so common, and its decomposition so frequent in our experiments, *that it is difficult to understand* how Lavoisier could have been working at the development of his theory, for so many years, without discovering its true nature. At this critical period of his life it is, indeed, well worth while to follow the course of his labours; for at every instant we see formations and decompositions of water perplexing and obscuring the phenomena he is observing, without his reason being ever awakened to the cause. He goes on, however, explaining what he understands, and merely recording what escapes his penetration at the time—trusting for light to the future. He had, in fact, consumed so much gas, and produced so much water, that he cannot but be blamed for not sooner attending to it, and making use of the clue which was thus furnished for his guidance; at the same time, it is matter of admiration that these early experiments, which seemed at

the time so imperfect and inexact, all become precise by his subsequent discoveries; while nothing requires to be changed in the general views they had suggested:' and he afterwards notices that the experiments in which he, along with Meusnier, accomplished *the analysis* of water, were chiefly valuable as enabling him 'to dispel *the doubts which the process of its synthesis* had not been able to remove from some scrupulous understandings.'

The fact of this obstinate incredulity is also noticed in Lavoisier and Meusnier's own memoir, here referred to by Dumas; where they complain that, after all the trouble they and Monge had taken to 'exclude all room for doubt,' some persons still insisted that the water 'produced by the *synthesis* might be 'held to have been merely *suspended* in the airs, and deprived 'of support at the moment of their combustion,' and therefore they now bring forward this corroborative proof, by *analysis*.

We see, then, that men quite as acute as Cavendish, and fully in possession of all his, and of still better experiments, yet demurred to the conclusion which Mr. Harcourt thinks followed *necessarily and immediately* from the knowledge of them; and we may now, therefore, be allowed perhaps to say, that we see no such force in his favourite argument, as to the conclusion being *involved* in the experiments, as must compel us to shut our eyes on the proofs we have already produced, that Cavendish could, in fact, have drawn no such conclusion at the time, and most probably had formed no positive one till after he had heard of the clear and confident explanation of Watt. If there was grave doubt and confident incredulity in other quarters, after the far more accurate and multiplied experiments of Lavoisier and Monge, would there be any thing to wonder at in the perplexity and indecision of Cavendish, as to the meaning of his own comparatively imperfect trials? He was by nature hard to satisfy, as to his grounds of decision; and quick only in suggesting reasons for doubt; and he could scarcely fail to be aware of some, at least, of the many imperfections which every one must now recognise in his processes. He evidently took no precautions, for example, to ensure *the dryness* of the gases he used, or the purification of his hydrogen from the many contaminations to which it was exposed in the course of preparation. They who wish to see how formidable these were, and by what contrivances alone they could be avoided, would do well to look into the beautiful experiments of M. Dumas, on the composition of water, published in his *Mémoires de Chimie*, in 1841, (p. 399, &c.) From his neglect of these precautions, it is also certain that the hydrogen employed by Cavendish was far indeed from being pure; as he estimates its weight at least one-third higher than it ought to be; and in

fact only deduces this, in his capital experiment, from certain references to the specific gravity of the atmospheric air from which it had been separated. In spite of all this, we do not mean to dispute that the results he obtained were sufficient to have warranted his conclusion; being, indeed, substantially all that Watt had to warrant his. But we do think that the consciousness of these imperfections was very likely to have caused the hesitating and over scrupulous mind of Cavendish to shrink from adopting it, till encouraged by the example of a more peremptory and bolder spirit.

This, then, is the sum and amount of our own convictions on the subject; and we should be sorry indeed to have it thought that we carry them any farther. We do not believe, and would not appear to insinuate, that the true interpretation of his experiments had never at all occurred to Cavendish till it was suggested to him by Watt, in spring 1783; or that, immediately upon that revelation, he unfairly resolved to claim it as his own, and incontinently despatched Blagden to Paris to promote that dishonest claim. Our own impression is, that it had previously presented itself to him, as a possible, perhaps probable, but by no means certain or satisfactory solution, of the startling phenomena he had observed. He might have been hesitating, like Monge, between the alternative conclusions of that ingenious inquirer; or be resting on the balance of *other* alternatives, of his own suggestion; he might have thought the synthetic proof insufficient till confirmed by the analysis; or he might even have been contented, with his unimpatient temper and habits of long pondering, to let the problem remain, as for the present, insoluble; and to wait, like Lavoisier, for light from the future. On such a frame or state of mind, it is difficult to say, with any assurance, what the effect might be, of the strong, lucid, and, above all, confident and unhesitating decision of Watt. Such an example presented suddenly to such a person, may sometimes operate like the spark which sets the collected combustibles in a blaze; or the little shake which will often effect the instant crystallisation of elements that floated quiescent before, in the yet untroubled fluid. Nor will it always be easy for the party himself to determine how much of what follows is owing to the external impulse, and how much to the natural development of his own pre-existing impressions; what virtue there was in the Angelic troubling of the waters, and what in their own healing properties. Nothing, we believe, is so common, as for men of full minds to confound, in their ultimate conclusions, much of what they have derived from others, with what they have fairly worked out for themselves; and to be really unable to discri-

minate between their unconscious borrowings, and the products of their own honest labour.

Some confusion of this kind must have occurred, we are persuaded, in the case of Cavendish; for there is no other supposition, which, in our view of them, can reconcile either one part of his conduct with another, or the whole of it with his character. He must have known, we think, that he was indebted to Watt for the first proper *extrication* of his theory, or for the firm and clear view he ultimately attained of it; but he was, probably, also aware, that he was *not* indebted to him for its first suggestion — and these conflicting impressions naturally brought him into some perplexity. Under the influence of the first, he wisely and properly abstained from asserting any such claim of priority over Watt, as he had resolutely maintained against Lavoisier; while the effect of the second was to prevent him from making any express acknowledgment at all, of an obligation which he felt it would be difficult to define, and yet impossible to admit without large qualifications. In this dilemma he took the course, which, if not quite unobjectionable, was the most natural, perhaps, for a man of his habits and temperament; to abstain, in short, from either giving or asking credit to any precise extent, and to say as little as possible on the probable state of the balance. By waiving all claim to priority over Watt, either as to announcement or actual discovery, he virtually admitted, we think, that Watt had been first with the disclosure, as all the extant writings imported, and, at least as early as himself with the real formation of the theory; which implies that his own views of it were not completed, at all events, at any earlier period: while, by withholding all direct acknowledgment of help or obligation, he left it open to himself and his friends to challenge as large a share of merit in the original conception, as the world could be persuaded to allow.

What that share really was, or for how much he was actually indebted to his illustrious contemporary, it is now, we fear, impossible to determine. He probably took it to be less than it really was; and Watt, perhaps, took it to be more. Their respective admirers, too, will continue, we suppose, to differ in their estimates; and to this we can have no objection — so long as facts are not distorted, nor inconsistencies overlooked. For our own parts, we have vindicated Watt's claim, we think, as an original and independent discoverer of the true composition of water, and as the very first who proclaimed that discovery to the world; and beyond this we have no serious anxiety. It would derogate nothing from his merit, if Cavendish also could be proved to have been such a discoverer — as we rather think Monge really was, though at a later period. But we must say

that we think it plain that, though Cavendish may have had floating visions of that discovery at an earlier period, he had no clear revelation of it till it was announced by Watt; and that, even if his *conception* of the theory could be traced to a prior date, it is evident that he never would have been *delivered of it*, had not Watt assisted at the birth.

Had these two eminent men but lived more together, we feel assured, from the perfect candour and modesty which belonged to both characters, that they must have come to a perfect understanding, upon this and all other things: And, but for the shy and unsocial habits of the one, and the distant residence of the other, we are persuaded that such a complete and cordial explanation must have taken place. For the bitter expressions of Watt, on De Luc's first mentioning to him the tenour of Cavendish's paper, were used long before he had made that important addition to it, in which the truth and originality of Watt's theory are implicitly admitted, without the least hint of its having been in any way anticipated by his own. With this, too, the calm and confident spirit of Watt appears to have been satisfied; for he afterwards became personally acquainted with Cavendish, and they continued, we are happy to learn, for the remainder of their joint lives, on a footing of mutual courtesy and regard. They knew each other, in short, as men of genius and honour; and as fellow-labourers 'in the great Task-master's eye;'—and this was enough, perhaps, for their satisfaction in their then condition of mortality.

They know each other, however, still better, by this time! And a very pretty '*Dialogue of the Dead*' might be composed, we think, by any one who could now contrive to overhear them discussing, with smiles of self-pity and mutual indulgence, their little earthly distrusts and perplexities—and triumphs and discoveries, in those mild Elysian shades where misunderstandings and jealousies can no longer intrude; and where we are assured that an honoured place is reserved for all who have benefited their kind by their genius, or exalted it by their example,

> 'Inventas aut qui vitam excoluere per artes,
> Quique sui memores alios fecere merendo.'

In the mean time, and waiting such a revelation, we have honestly done what in us lay to reconcile the claims of their admirers in this world; and endeavoured at least, to hold the balance between these distinguished rivals, with as careful and steady a hand as our own infirmities would allow. We cannot report that it hangs even. But we think we can with confidence attest that no false weights have been admitted into the preponderating scale.

ART. IV.—*Letter from Sir Robert Peel to the Electors for the Borough of Tamworth*, pp. 35. London: 1847.

AMONG the present phenomena of the political world there is none more important than the amount of ability which is applied to the conduct of the daily and weekly press. Of late years, a higher class of minds—men of cultivated understandings, well versed in history, literature, and the principles of political philosophy,—have become regular contributors to many of the most widely circulated newspapers. The result has been, that, in the midst of much that is worthless, and much that is mischievous, a large amount of useful political discussion has been laid before the public, in a state comparatively free from scurrility and senseless exaggeration; and that the capacity of the people for passing a sound judgment on public measures has been greatly increased by the force and clearness with which the arguments on both sides of every important question have been presented to their minds. However strong may be the current of prejudice or error, in any particular direction, it almost always happens that some journal has the courage and good sense to struggle against the stream, and to attempt to obtain a hearing for the unpopular, though correct, view of the question. If we compare the present state of the newspaper press with the period of the struggle between Charles I. and the Long Parliament, when the appeal to public opinion was made by long-winded state papers, written and circulated by the two contending parties; or even with the times of Queen Anne and George I., when politicians carried on their contests with pamphlets and periodical essays; or if we go still lower—to the time of the French Revolution, and refer to the extracts from the contemporary press given in the Anti-jacobin, we shall be able to estimate the important change in practical politics which has been caused by the greatly improved character of our newspaper press, and the extensive influence which it exercises upon the conduct of public affairs. Such, however, being the extent and nature of the political discussion carried on by that portion of the periodical press which is of daily and weekly appearance, there is little need, or indeed opportunity, for a Quarterly Reviewer to remark upon the politics of the day; and if we venture at certain intervals to submit to our readers our general opinions on the political state of the country, it is only because we think that our position enables us to take a more comprehensive and deliberate, and we trust a more dispas-

sionate view of passing events than can be taken by those who are compelled to form their opinion at the moment, and to write it down as soon as formed; being subjected to the same necessity of hasty judgment, as statesmen of hasty action.

It appears to us, that the present time demands from us such a retrospective and prospective view of the state of the country as we have just described. We have just entered on the first session of a new parliament, and the second session of a new ministry, which had previously not commanded a majority in either house of parliament. Besides, the commencement of a new era in our commercial legislation may be almost dated from the year 1846. Political parties, broken up, thrown into confusion, and almost pulverised by the events of that year, have not hardened again into a new and compact adhesion. The seeds of new combinations and new measures, perhaps even of new opinions, are floating about at random in the political chaos, and await the organising hand of the statesman, who is to separate the discordant elements, and shape them into a new and more regular form. At such a period as this, it may not be devoid of use, if we trace an outline of the principal events of our internal history during the last few years, for the purpose of ascertaining the existing position of parties and opinions, and the political state of the country, and of considering what is the policy which is best suited to our present social condition.

The fiscal propositions of Lord Melbourne's government in 1841 were made under unfavourable circumstances, but they were based upon sound economical principles, and it would have been well for the country if they had been adopted. Free trade opinions had not at that time obtained the currency and stability which subsequent events have given them; and the mercantile, as well as agricultural classes, were startled and alarmed by the proposed changes. There was no Irish famine to enforce the arguments in favour of cheapness and abundance, or against high prices and an artificially restricted supply. Throughout the country there was a prevailing, though groundless, dread of the relaxation of the protective system; and the Conservative party in parliament saw that the time was come when the finishing blow could be safely given to the already weakened Whig administration. In the debates which preceded the fall of this ministry, and during the general election which succeeded it, Sir Robert Peel, and his chief supporters in the House of Commons, did little to inflame the anti-free-trade feeling, and they carefully abstained from the use of expressions which committed them to the perpetual maintenance of protective duties on corn. Sir Robert Peel's oppo-

sition to the government proposal on this latter subject was mainly rested on the supposed superiority of a sliding scale to a fixed duty. But although he did little to increase the anti-free-trade cry, he did not repudiate it; by his silence at so critical a moment he permitted his followers to believe that he shared their opinions; he maintained the necessity of a protective duty on corn; and by heading the attack upon the government, and subsequently succeeding to the office of prime minister, he certainly took advantage of their strenuous and combined exertions in favour of the principle of protection.

However, soon after his accession to power, Sir R. Peel began to show that he was not prepared to purchase the support of the agricultural interest by any extraordinary concessions to their wishes. The revised corn law which he proposed at the commencement of the session of 1842, mitigated, in some degree, the previous protection, and lost him the adhesion of the Duke of Buckingham, who left the cabinet from dissatisfaction with the new measure. The alterations of the tariff proposed in the same year, and in 1844, (particularly the remission of the duties on foreign cattle and meat), and even the Canada corn law of 1843, were more decided movements in the direction of free trade, and created much alarm and discontent among the agricultural party. The measures of Sir R. Peel's administration respecting Ireland, especially the bill for the permanent endowment of Maynooth, were dictated by a liberal spirit towards the Roman Catholics; and no attempt was made to conciliate the high Church party by the appropriation of public money to ecclesiastical purposes, or by bigoted measures on the subject of national education. In the conduct of his ministry there were no signs of a reactionary tendency; though the ministers did not call themselves liberals, they administered the government upon liberal principles; and thus they had practically alienated a considerable section of the most backward of their own party, even in the summer of 1845.

Sir R. Peel's adoption of a more liberal policy than had been anticipated of him, appears to have arisen mainly from his consciousness, when in government, of the necessity of adapting his measures to public opinion, and of not falling short of a standard which had been practically established by his predecessors. Having assumed the leadership of the reformed parliament, and being placed in a position where he could closely watch the course of public events, and the effects of new legislation, he felt the convenience and also discovered the safety and practical good working of a liberal system of administration. Enlightened by experience, he discarded many traditional opin-

ions which he had hitherto retained from habit, and without sufficient examination.*

In this state of mind he received, during the autumn of 1845, the first accounts of the failure of the potato crop, which began then to show itself to a considerable extent over the whole United Kingdom, but which was, for obvious reasons, most formidable in Ireland. Influenced by the example of Belgium and other foreign countries which had already opened their ports to foreign grain, he came without delay to the conclusion that the utmost facilities ought to be given for the importation of corn. Accordingly, on the first of November he proposed to the cabinet that 'the duties on the import of foreign grain 'should be suspended for a limited period, either by order in 'council or by legislative enactment; parliament, in either case, 'being summoned without delay.'† He considered this proposition as involving the necessity of a reconsideration of the laws imposing restrictions on the import of foreign grain, and thought that 'any new laws to be enacted should contain within them-'selves the principle of gradual reduction and final repeal.' To this proposition the cabinet did not accede; only three‡ of Sir R. Peel's colleagues supported him in this prompt and decisive though judicious policy. Nothing, therefore, was said or done publicly. Near the end of the month appeared Lord J. Russell's letter to the electors of London, in which he complained of the inaction of the government at so critical a moment§, expressed his opinion that the time for a compromise was past, and declared himself in favour of the total though not necessarily immediate abolition of the corn duties. 'The imposition (he 'said) of any duty at present, *without a provision for its extinc-'tion within a short period*, would but prolong a contest already 'sufficiently fruitful of animosity and discontent. The struggle 'to make bread scarce and dear, when it is clear that part, at

* In his speech on the 22d of January, 1846, Sir R. Peel says, in reference to his change of opinion on the Corn Laws: — 'Now, sir, let me again repeat, that I claim no credit whatever for having drawn my conclusions from abstract reasoning — my conviction has been brought about by observation and experience.' — 83 Hans. p. 77.

† Sir R. Peel's Letter to the Queen, of 8 Dec. 1845. 83 Hans. p. 1005. See also his statement, ib. p. 86.

‡ Two out of the three persons alluded to are understood to have been Sir James Graham and Lord Aberdeen.

§ Lord J. Russell afterwards stated his opinion in parliament, that ministers, by proroguing parliament at this crisis, 'were not doing their duty to their sovereign and the country.' — 22d Jan. 83 Hans. 97.

'least, of the additional price goes to increase rent, is a struggle 'deeply injurious to an aristocracy which (this quarrel once 'removed) is strong in property, strong in the construction of 'our legislature, strong in opinion, strong in ancient associations 'and the memory of immortal services.'*

The cabinet reassembled on the 26th of November, and agreed to the issue of an extraordinary commission for the relief of distress in Ireland. Shortly afterwards Sir R. Peel renewed his proposition to the cabinet, with the exception of the order in council. The events which had occurred since the beginning of the month had modified the views of the former majority, and on this occasion Lord Stanley stood alone in his opposition. Lord Stanley had been willing, from the first meeting of the cabinet, to consent to a temporary suspension of the corn duties, but he refused to consent to their prospective abolition. After taking a short time for consideration, he decided to tender his resignation; and in this step he was supported by one of his colleagues, whom he did not feel at liberty to name, but who subsequently joined Sir R. Peel.† Upon this Sir R. Peel's government was broken up, and his resignation was accepted by the Queen on the 6th of December. As Lord Stanley was not prepared to undertake the formation of a government, the Queen, of her own choice, then sent for Lord John Russell.

Such is a brief though accurate narrative of the proceedings of Sir R. Peel in pursuance of a resolution, which has perhaps given rise to more discussion and more angry comment, both in and out of parliament, than any other act of a public man in this country, and which has been attended with consequences the importance of which has not yet been fully developed. We, of course, derive unmixed satisfaction from the conversion of Sir R. Peel on the subject of the Corn Law, and only regret that it did not take place at an earlier period. Against the body of his own party, however, he appears, by this change, to have committed an inexpiable sin; particularly by his *mode* of effecting the transition. We observe, from a late number of the Quarterly Review, that the quarrel between Sir R. Peel and his late followers, has now, to a great extent, become a question of *procédés;* he ought not, it is said, to have altered his course on so important a matter, without previously informing and

* This letter is reprinted in Hansard, ib. p. 110.

† See Lord Stanley's speech, 25th May, 1846; 86 Hans. p. 1139; Lord Haddington's speech, 26th May, ib. p. 1267; Sir R. Peel's, 22d Jan. 1846; 83 Hans. p. 88. It is understood that the Duke of Buccleugh was the member of Sir R. Peel's cabinet referred to by Lord Stanley.

consulting his party. This is too nice a question of party morality for us to attempt any solution of it; but we may be permitted to make a few remarks on the position in which he stood in the memorable month of November 1845.

It was almost universally admitted that it was incumbent on the government at that time to relax the restrictions on the importation of corn. Although it has been attempted of late to deny that there was any scarcity of food, or any ground for expecting it in the last months of 1845, nobody at the time had any doubt on the matter. Lord John Russell's letter, dated the 22d of November, is decisive evidence of the prevalent belief on this point, if any evidence is required. * Lord Stanley was willing to consent to a temporary suspension of the duties, and a similar opinion was afterwards expressed in parliament by most of the protectionist party. †

The practical question at issue between Sir R. Peel and Lord Stanley, when the latter, at the end of November, stood alone in his opposition, and broke up the government, was whether the Corn Laws should be suspended temporarily, upon an understanding that the duties should revive after the suspension; or should be suspended temporarily, with a view to their ultimate though gradual repeal. The question is thus stated by Sir R. Peel, in his speech of May 15th.

'It was quite impossible for me, consistently with my own convictions, after a suspension of import duties, to propose the re-establishment of the existing law with any security for its continuance. Well, then, the question which naturally arose was this — shall we

* Compare also the following excellent remarks in Lord J. Russell's speech of 22d of January, 1846: — 'I see, with no inconsiderable surprise, that at meetings of the agricultural interest, it is alleged that the danger in which we are placed has been exaggerated; that scarcity does not exist; that the prospect of famine has been exaggerated; and therefore we ought to leave the protection-laws, as far as food is concerned, as they at present stand. But do these gentlemen never carry their thoughts forward? Do they never consider that if it has pleased Providence to visit us with a calamity lighter than was at one time dreaded, *there may come a time when scarcity may be undoubted — when it may come home to the eyes, and understandings, and feelings of all men — and when the prospect of famine may be too near and too real not to appal the stoutest hearts among us?* Do these gentlemen wish to wait for such a time as that? Do they wish to wait until no power of choice is left them — till they have no discretion — *and till nothing remains but a capitulation to the multitude*, who will imperiously demand the repeal of those laws which limit the supply of food?' — 83 Hans. p 108.

† See Sir R. Peel's speech, 16th Feb. (83 Hans. p. 1015.); May 15th (86 Hans. p. 690.); Sir J. Graham, 10th Feb. (83 Hans. p. 717.)

propose some diminished protection to agriculture; or, in the state of public feeling which will exist after the suspension of restriction, shall we propose a permanent and ultimate settlement of the question?'

Afterwards he adds:

'I think you could have continued this law, notwithstanding these increased difficulties, for a short time longer; but I believe that the interval of its maintenance would have been but short, and that there would have been, during the period of its continuance, a desperate conflict between different classes of society; that your arguments in favour of it would have been weak; that you might have had no alternative at an early period, had the cycle of unfavourable harvests returned — and who can give an assurance that they would not? — that you might at an early period have had no alternative but to concede an alteration of this law under circumstances infinitely less favourable than the present to a final settlement of the question. . . . . It was the foresight of these consequences — it was the belief that you were about to enter into a bitter and, ultimately, an unsuccessful struggle, that has induced me to think that for the benefit of all classes — for the benefit of the agricultural class itself — it was desirable to come to a permanent and equitable settlement of this question.'*

The same line of argument had been pursued by Sir R. Peel in his speech of the 16th February.

'After the suspension of the existing law, and the admission of foreign importation for a period of several months, how do you propose to deal with the existing Corn Laws? That is the question which a minister was bound to consider who advised the suspension of the Corn Laws. Now, my conviction is so strong, that it would be utterly impossible, after establishing perfect freedom of trade in corn for a period of seven or eight months, to give a guarantee that the existing Corn Law should come into operation at the end of that period, that I could not encourage the delusive hope of such a result. I know it may be said, that after a temporary suspension of the law, the law itself would revive by its own operation — that there would be no necessity for any special enactment to restore its vigour. But I think it is an utter misapprehension of the state of public opinion to suppose it possible, that after this country, for eight months, should have tasted of freedom in the trade of corn, you could revive, either by the tacit operation of the law itself, or by new and special enactment, the existing Corn Law. Surely the fact of suspension would be a condemnation of the law. It would demonstrate that the law, which professed, by the total reduction of duty on corn when it reached a certain price to provide security against scarcity, had failed in one of its essential parts.'†

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* 86 Hans. p. 691—4.

† 83 Hans. p. 1018. See Sir R. Peel's re-statement of the same argument, *Address*, p. 26.

Sir James Graham likewise laid his objection to a mere suspension on similar grounds:

'I have told you that I think the present an unsatisfactory law; and according to my present experience, I could not, after its suspension, have supported its reimposition. I have always stated that my objection to a fixed duty as a permanent fiscal measure is insuperable; because I think that if the duty should be high, it would be impossible, when prices rose, to exact it; and whenever prices fell, if the duty should be low, it would fail for the purposes of protection, and the agricultural interest would then incur all the obloquy of maintaining protection without deriving any advantages from it. We might have proposed some small remnant of the sliding-scale, with a reduction of protection, which it would have been unworthy of the agricultural interest to accept, and still more unworthy of the government to offer. Under these circumstances, the early abolition of the Corn Law, as it appeared to me, would be inevitable on its suspension.'*

According to the view taken by Sir R. Peel, the necessity for a suspension of the Corn Law was created by the emergency; but out of this suspension, in the actual circumstances of the country, there arose a subsequent necessity for its prospective abolition. Against the solid arguments derived from public policy thus stated in the House of Commons, Lord Stanley has no stronger justification for his own course than the following appeal to feeling. After stating his doubts whether the relaxation of the corn duties would relieve the scarcity in Ireland, he proceeds thus:

'At the same time, so strongly and forcibly did I feel the importance of unanimity in the cabinet — so strongly was I convinced of the injury done by the breaking up of any government, that although entertaining serious doubts whether a suspension of the Corn Laws and the opening of the ports would be of avail, or might even be injurious, *I intimated my entire readiness to yield my own opinion, and consent to a suspension of the Corn Law,* provided a suspension was proposed. But when I was told . . . that that temporary exigency, that passing emergency of apprehended scarcity in Ireland, was not to lead to a remedy commensurate in duration with the expected evil; but to be made the groundwork of suspending, for the purpose of not re-enacting, the Corn Law, I *felt* that I could not take that course consistently with *my own feeling as an honourable man;* and that, with such ulterior views, to propose to parliament to sanction the opening of the ports would be to lead those who were disposed to support us into a snare and a delusion.'†

* Speech, 10th Feb. 83 Hans. p. 718.
† Speech, May 25th. 86 Hans. p. 1138.

Let us now consider, setting aside all appeals to consistency and party ties, what were then the main practical difficulties in the way of a mere suspension of the corn duties, to be followed by their revival in a substantive form; and what would have been the probable result of this policy.

In the first place, it is to be borne in mind (as Sir R. Peel states in his Address to his Constituents, p. 26.), that 'no prudent 'minister deciding on that course at that time, could safely 'exclude from his consideration the probability that the same 'disorder which had affected the potato-crop of 1845, might 'affect that of 1846.' A disease, identical with that in Europe, had attacked the potatoes in North America in three successive years, beginning with 1843; and this fact could not fail to make an impression on the government. Again, the temporary suspension of a *sliding-scale* was tantamount to an admission of its practical failure. The argument against a *fixed duty* mainly relied upon, was the impossibility of collecting it during a period of high prices; whereas, a sliding-scale, it was said, adapted itself to all circumstances. Besides, what could be the use of relying on temporary suspensions of the duty at seasons of scarcity, when the suddenness of the change did not allow foreign nations to be prepared for our demand? The application of the principles of free trade to nearly all other articles of import, and particularly to cattle and meat, had likewise left the corn protection almost isolated, and from its isolation, weak, exposed to attack, and hard to defend. In addition to all this, there was the untiring, intelligent, and well-supported opposition of the Anti-corn-law League; there 'was Lord John Russell's recent declaration, that the time for a compromise on the Corn-law question was gone by; there was the prospect of a violent popular excitement in the large towns, as soon as it was known that the suspension would lead to no permanent change, and redoubled appeals to the people against selfish landlords who wished to make bread dear, in order to increase their rents. If Sir R. Peel had, in the winter of 1845–6, proposed a mere temporary suspension of the Corn Laws, refusing to hold out any prospect of a final settlement, he would have had to open a most odious and unpromising campaign for the agricultural interest, with the certainty of ultimate defeat, preceded by violent popular contests, and bitter exasperation of parties and classes. Even with unshaken convictions in the advantage and justice of the Corn Law, this would have been no easy or pleasing task; as Lord Stanley doubtless thought, when he refused to undertake the formation of a Protectionist Cabinet at this crisis. How impossible then was it to begin

this struggle, with convictions altogether undermined by fresh and decisive experience, as Sir R. Peel states his own to have been. The facts and considerations which produced this impression on his mind, are thus referred to by Sir R. Peel in his speech of the 22d of January, 1846.

'My opinions have been modified by the experience of the last three years. I have had the means and opportunity of comparing the results of periods of abundance and low prices with periods of scarcity and high prices. I have carefully watched the effects of the one system and of the other; first, of the policy we have been steadily pursuing for some years, viz. the removal of protection from domestic industry; and next, of the policy which the friends of protection recommend. I have also had an opportunity of marking from day to day the effect upon great social interests of freedom of trade and comparative abundance. I have not failed to note the results of preceding years, and to contrast them with the results of the last three years; and I am led to the conclusion that the main grounds of public policy on which protection has been defended are not tenable; at least I cannot maintain them.'*

These reasons are more completely stated in Sir R. Peel's recent Address to his Constituents.

'It was from the combined influence of these various considerations — from diminished confidence in the necessity or advantage of protection — from the increasing difficulty of resisting the application to articles of food of those principles which had been gradually applied to so many other articles — from the result of the experiment made with regard to cattle and meat in 1842 — from the evidences of rapidly increasing consumption — from the aggravation of every other difficulty in the maintenance of the Corn Laws, by the fact of their suspension on the first real pressure — it was from the combined influence of such considerations, that I came to the conclusion that the attempt to maintain these laws inviolate after their suspension would be impolitic, that the struggle for their maintenance would assume a new character, and that no advantage to be gained by success could counterbalance the consequences of failure, or even the evils attending protracted conflict. . . . . Between the maintenance of the Corn Laws inviolate, and a measure involving their ultimate repeal, I saw no middle course satisfactory or advantageous to any interest; I saw still less of satisfaction or advantage in indecision and irrational delay; I could not admit the incompetency of the present parliament to deal with this as with every other question of public concern. There appeared to me, upon the whole, much less of public evil in the resolution finally to adjust the question of the Corn Laws than in any other that could be then adopted; and that being my deliberate conviction, I felt it to be my duty to make the painful

* 83 Hans. p. 71.

sacrifices which the acting upon that conviction must inevitably entail.' (P. 31, 32.)

On reviewing, with the assistance of subsequent events, the proceedings of Sir R. Peel at this crisis, we are satisfied that his policy was wisely chosen, and that no other course was open to him, consistently with the public interests, except indeed a resignation immediately after the rejection of his first proposition to the cabinet. His view of the impracticability of a temporary suspension, accompanied with an intention to restore the protective duties on corn, has been completely confirmed by experience. We now know that if the corn duties had been suspended in November 1845, until September 1846, the suspension must have been renewed until September 1847, and that the suspension until September 1847, must have been again renewed until March 1848. If the temporary scale commencing at 10*s.* was abandoned almost as soon as it saw the light, even by the protectionists themselves, what would have been the fate of the more effectual barrier to importation created by the previous sliding-scale? With a suspension thus renewed, and with the opportunities thus given for the working of an effective agitation — the arguments of the free-traders being enforced by the constant presence of Irish famine and by prices of wheat above 80*s.* — the defeat of protection and the triumph of free trade were absolutely certain, whatever might have been the moves of the ministerial game. The anti-corn law leaguers must indeed have been sorry engineers, if, with this solid fulcrum for their lever, they could not give the finishing shake to the undermined and tottering edifice of protection. And if, with such an event in view, Sir R. Peel had pledged himself to restore the Corn Laws after a temporary suspension, and had found himself utterly incapable of redeeming his pledge, but had convulsed the country by the fruitless attempt to maintain an odious and unjust privilege, he would, indeed, have been obnoxious to the charge of leading his supporters into 'a snare 'and a delusion.'*

When Lord J. Russell was suddenly called on to form a cabinet in December, 1845, he received a distinct assurance of Sir R. Peel's intention to support him in carrying through parliament the repeal of the Corn Law. Nor can there be any

* Lord J. Russell closes his letter to the Queen, of the 20th of December, 1845, with the following passage: — 'The country requires, above all things, an *early and peaceable* settlement of a question which, if not so settled, may, in an adverse state of affairs, cause a fearful convulsion.'

doubt that Sir R. Peel wished that the Corn-law question should be settled by those who, for some years past, had been the declared opponents of the existing system. Nevertheless, the circumstances under which Lord John Russell was called on to undertake this settlement were not very encouraging. In the first place, he had not a majority in either house of parliament; and it was doubtful how many of Sir R. Peel's supporters would follow him, as a member of opposition, in voting for the repeal of the Corn Laws. Lord J. Russell's friends were, moreover, summoned unexpectedly to London from different parts of the country; there was little time for consultation and the removal of difficulties, nor were there the eagerness and warmth inseparable from the party struggle which usually precedes a change of government. The result was, that, owing to some personal objections wholly unconnected with the Corn-law question, Lord J. Russell failed in forming a government, and that Sir R. Peel and his colleagues, except Lord Stanley, resumed their former places. Whatever charge may be made against the leaders of the Whig party for their conduct at this crisis, it is certain that they cannot be accused of any rapacious desire of office. It is, in our opinion, to be regretted that Lord J. Russell did not accomplish the work which he had undertaken. He would have 'formed his ministry on the basis of a complete free trade in 'corn, to be established at once, without gradation or delay.'* However, the settlement by Lord J. Russell, though equally certain with that accomplished by Sir R. Peel, would probably have been less pacific, and perhaps might have required a dissolution of parliament and the second year of scarcity to bring it to pass.

As far as the influence on public opinion is concerned, the chief merit of the victory over the Corn Law is due to the Anti-corn-law League. The leaders of this body carried the question in the country. But its repeal was carried through parliament by Sir R. Peel. If this had been done by Lord J. Russell, undoubtedly he would have possessed a stronger title to popular gratitude than at present, and he would have added another wreath to the laurels which he had previously gained by the achievement of great popular triumphs. On the other hand, the Liberal party (as we shall proceed to show) has, through the events of 1845–6, gained an advantage, which, if properly improved, must, for some time to come, ensure its preponderance in the state.

As the more unreasoning and selfish portion of the Conservative party — those who really believed that their rents

* Letter to the Queen, 83 Hans. p. 107.

depended on the sliding-scale, and who voted in order to keep up their rents—not only separated themselves from Sir R. Peel, but heaped every species of rancorous vituperation upon his head; it was impossible for a man of honourable feelings to remain minister under such circumstances, even if by some concession he could have purchased their future allegiance. It was, therefore, evident that Sir R. Peel's restored ministry would not long survive the repeal of the Corn Law. The Irish Disturbances Act was the occasion, rather than the cause, of his resignation. That obstacle might, indeed, if he had wished it, have been easily removed. No necessity existed for pressing forward the bill. But we feel satisfied that under no circumstances would the ministry of Sir R. Peel have survived more than a very short time the passing of the Corn-law repeal, which he had undertaken, though without a majority, to carry. The breach between him and the main section of his followers was complete. They would not be led by him; he did not wish to lead them. Neither of the two parties to the quarrel was willing to be reconciled. He could not apologise for a deliberate act; and they were too angry to accept any apology, or even to wish for one.

The result has been the lasting separation of all the leading and more intelligent portion of the Conservative party from the majority. The seceders hold an intermediate station, but visibly inclining towards Liberal opinions. They are unpledged, and free to act according to their individual views on all political questions: but recent events have clearly shown that they have a much stronger affinity with the Liberal than with the Protectionist party. Many occurrences, both during the last session and the late elections, have proved that the repulsion between Protectionists and free trade Conservatives is sufficiently strong to drive the latter towards the opposite scale of the balance.

The members of the Anti-corn-law League probably little thought what important political consequences would flow from their victory. They not only contributed greatly to the repeal of the Corn Law, but they have produced a permanent schism in the Conservative party, which has paralysed it for all active purposes.

> Plus illâ vobis acie, quam creditis, actum est
> Arsacidæ: *bellum victis civile dedistis.*

Whatever may be the evils of an organised system of popular agitation, like that of the Anti-corn-law League, such a body is naturally called into existence by the obstinate adherence of politicians to unjust and impolitic laws; and its effects are less detrimental than the abuse which is attacked. The worst

consequence of such a body is, that it may create a vested interest in agitation, and prolong the existence of the combination beyond the occasion which gave it birth. Lord Stanley, even so late as the 25th of May, 1846, predicted, in the House of Lords, that this confederacy would not dissolve itself, although the Corn Law was repealed. 'When, my lords, (he said) was an 'organised agitation put down by concessions extorted from its 'opponents? Depend upon it, that when this body shall have 'once tasted the cup of political power, the draught will be too 'sweet to induce them to relinquish it. I agree with my noble 'friend that this is only one of the measures which, one after 'another, will be the object of the Anti-corn-law League.'* Notwithstanding this confident prediction, we know that the Anti-corn-law League has been dissolved, both nominally and really, since the settlement of the Corn-law question; and that the leaders of that powerful body had, like Washington, the virtue, as well as good sense, to abdicate at the moment of their greatest power. In this respect they have exhibited a striking contrast with the Catholic association of Ireland, which, having, under the leadership of Mr. O'Connell, done much to procure the repeal of the Catholic disabilities, did not, when this legitimate object had been attained, surrender its power, but was revived, under the same leader, for the mischievous and impracticable purpose of detaching Ireland from England, and destroying the integrity of the empire.

The schismatic portion of the Conservative party — those who have deflected from the orthodox Tory faith, and incline to the Liberal heresy — must, by degrees, be incorporated into the Liberal party. The remaining section of the Conservatives, led, indeed, but scarcely recognising its leaders; held together by a mere antipathy; having no common principle of action; Protectionists in name, but repudiating protection as a practical object — must gradually become a mere element of resistance, a mere drag or impediment to useful measures, without any of the animating genius or practical sagacity which inspirits a political party, and guides it to victory. All experience shows that in politics, as in war, numbers alone, without able leaders, avail but little. A few men, wise in counsel, may influence a whole people: but *Vis consili expers mole ruit suâ.*

The parliament which was dissolved in July last had reached a mature age, and the Queen's proclamation did not long anticipate its natural termination. Its dissolution was not the result of any political exigency, and the elections took place under

* 86 Hans. p. 1173.

circumstances favourable to a deliberate expression of public opinion. The members elected to serve in the Commons house of parliament may be taken as fair exponents of the ordinary state of political opinion and party now existing throughout the country.

Reckoning the avowed supporters of the present government, together with the miscellaneous body professing liberal opinions, and adding to these the Peelite secession, there is a decided majority favourable to a liberal system of government in the new House of Commons.

When we speak of *a liberal system of government* — a phrase, we confess, which is not very precise — we mean such a system of government as is indicated by the opinions of the old Whig party of England, improved and enlarged by modern speculation, particularly in questions of public economy and jurisprudence. The old Tory party had certain landmarks too sacred to be disturbed — certain questions which it was not permitted to reason about. If any new measure was proposed, which threatened to infringe this holy precinct, all discussion was stopped *in limine* by an appeal to some ancient maxim or authoritative dictum, which it was an act of political impiety to dispute. At present if any established institution or law is impugned, if any change is proposed, the proposition may be expected to receive a fair consideration from a liberal government; and although the members of a liberal party may differ on its merits, or condemn it altogether, yet they will not shut the door against discussion. Such was Kant's notion of an *enlightened* state of society; he held enlightenment not to consist necessarily in correct knowledge or sound belief, but to be characterised by a readiness to submit all opinions to the test of reason. Nobody but a zealot supposes that a liberal party will always be in the right. Its characteristic is, not to be infallible in its opinions, but to admit a rational standard of judgment in questions of practical government and legislation. There is, unfortunately, no infallible standard of rectitude in political, more than in theological, matters. Neither the wisest statesmen, nor the most carefully selected popular bodies, are exempt from liability to error. But all progressive amelioration is impossible, if existing institutions are to be considered as possessing some attribute of mysterious sanctity, which is to protect them from profane criticism; or if they are to be defended on any other grounds than their tendency to promote the general welfare.

The new parliament, as we have already remarked, has been elected during a political calm, and therefore, under circumstances favourable to dispassionate deliberation upon the great

and complicated interests of the country. It is not likely that its early discussions will assume the character of a struggle between adverse parties, contending for power. The old Tory party — the party of resistance — the party who considered the law as the perfection of human reason, who thought that every opinion of Sir W. Blackstone was almost equal in authority to Holy Writ, who were satisfied with no wisdom but that of their ancestors, and no times but the good old times — this party is now reduced to a state of comparative impotence for purposes of action and government. The attempts to breathe a soul into this once-formidable Colossus — to dress up its political system with a little spurious philosophy, erroneous statistics, and perverted history, however ingenious and persevering, can, in these days of comparative intelligence, obtain but partial and limited success. On the other hand, the Liberal party in parliament, though composed of varied and, to a certain extent, discordant elements, agrees in this, that its views are generally moderate and practical, and that it aims at no objects which, by any license of language, can be called revolutionary: it neither meditates any attacks on the vested rights of property, nor does it seek after extensive organic changes of the constitution. Even the Irish repealers, who profess a wish to make Ireland a substantially independent state, seem scarcely prepared to press the question of repeal, or even to combine for the serious pursuit of this end. Already the repeal forces are divided into two sections, having rival leaders, and separate places of meeting; and it can hardly be expected that the parliamentary representatives of this interest will be very cordially united.

Considered as a mere party combination, as resting merely on the ancient Whig connexion and the support of a few prominent and historical families, the present government stands on too narrow a basis to be able to survive the first parliamentary storm. But if we consider its position in the country, and the principles which it represents, and if we estimate the comparative value of the forces now opposed to it, the elements of its strength will be seen to be numerous and important. The government of this country — never an easy task — has of late years become a work of immeasurable difficulty; but if this arduous problem should be happily solved by Lord J. Russell, he has it in his power to lay the foundation of a firm and durable administration.

Notwithstanding all that has been said by theoretical writers and believed by authors of written constitutions, on the separation of the legislative and executive departments in a free state, the executive government is, in this country, the main organ of

legislative proposals in parliament, and has acquired this character, to an increasing degree, of late years. We think this tendency is, on the whole, beneficial. In the present multitude of legislative measures, it would be desirable that bills should, as far as possible, be in the hands of a responsible department of the government, and not carried through by private members, even if private members were, in the press of business, always able to succeed in the attempt. Practically, it is not possible to separate the functions of legislation and administration; and those who have the supreme control of the daily administration, and are thereby best informed of the actual state of the country and the working of its laws, are the fittest persons for arranging and proposing new legislative measures. The vast amount of current business which falls upon the members of the executive government, and their necessary absorption in the numerous details of patronage and official correspondence, have however suggested to the Economist (a journal which has acquired a deserved authority on subjects of political economy) to propose a plan for transferring the preparation of laws to a legislative commission, leaving the Queen's ministers solely occupied with the work of administration. We consider this plan, in itself, inadmissible, for reasons which, if it were necessary, we could state in a short compass; but we fully agree in the importance of arming the executive government with ample means for the careful preparation and mature consideration of legislative measures, before their introduction into parliament. This is a subject which deserves more than a mere cursory allusion, and we will therefore now only remark that the practical skill for which this country is renowned has not hitherto shown itself in the form or order of its legislation, the state of which has now become not only a great difficulty in the ordinary administration of the law, but a serious impediment to its amendment and reform. An improved organisation for preparing bills for parliament, and for regulating the introduction of alterations during their progress through both houses, is however quite compatible with the supremacy of the queen's ministers over all the legislative propositions of the government, as well as with the entire freedom of parliamentary discussion.

Being thus practically possessed of the initiative in matters of legislation, the executive government ought to adopt a steady independent course, and guide the judgment of parliament and the country in the difficult career of legislative progress. It ought not to wait on opinion, to take up suggestions casually thrown out, or to look into the confused mass of daily discussion for instruction as to its measures. The steersman of the state

vessel ought to be well furnished with maps and charts, and to watch the compass, the winds and the tides, with vigilant care; but in guiding the helm of the state he should rely mainly on the resources of his own judgment.

Popular opinion may be taken as a tolerably certain, if not unerring, index of the existence of evils in the body politic. If prices are excessive; if food is scarce; if taxes are too high or unfairly imposed; if justice is sold or denied; if life or property is unprotected, the suffering people are sure to cry out. But popular opinion is not to be trusted for the remedy. Most of the political nostrums for existing evils which at any time pass current, have little to recommend them beyond the confidence with which they are proclaimed by their authors. In this respect the people are like an individual patient, whose sensations inform him with sufficient clearness that his bodily functions are deranged, but who is unable to prescribe for his own malady. All history teems with examples of this distinction. In every country the people has made just complaints of its laws, and the measures of its government: in every country the people has been eager to obtain legislative remedies which were either inapplicable to the social disease, or tended to aggravate its virulence. If we are not mistaken, the recent history of Ireland will alone supply to the mind of most readers a sufficient stock of illustrations of our meaning. The wise statesman will therefore carefully note the manifestations of public opinion with respect to all actual evils. In the social economy, that is an evil which is felt as such. The measure of popular endurance varies with time and opinion. What at one time is thought an inevitable evil, a part of the ills which flesh is heir to, becomes at another a grievance removable by the government. To all expressions of popular discontent the chiefs of the state ought to lend an attentive ear. But with respect to the remedies for the evils complained of, they must rely on their own judgment for selecting, out of the numerous plans proposed for their consideration, that which is most suitable to the circumstances of the case. A statesman who borrows his measures and policy from casual advisers, will, after a time, find himself in pretty much the same position as a physician who should advise with his patients as to the mode of their treatment. Moreover, the people are far more willing to be led with respect to the choice of remedies, than with respect to the fact of a remedy being needed. Provided that their grievance is admitted to be well founded, they are generally willing to afford a considerable latitude to practical statesmen in the choice of the measure by which it is to be redressed.

From the foregoing considerations we draw the conclusion that, in the existing state of our parliamentary constitution, it is incumbent on every government to take a decided lead with respect to their policy, to adhere to an avowed and intelligible set of principles, and not to shape their course according to the shifting current of popular opinion, which can never guide them safely. To attempt to form a manual of ministerial politics by taking a leaf out of every man's book, must end not only in producing a heterogeneous aggregate of principles of action which would successively disappoint and alienate every party in the state, but also in creating a just impression of weakness and instability.

Such being the position of the present government with respect to the country, and such the expectations reasonably entertained of its future conduct in the new parliament, it may be convenient for the reader to be reminded of the questions which may be presumed to await its labours, and we will therefore pass briefly in review the principal subjects to which the attention of the legislature is likely to be directed during the remaining and more important part of the session.

We may remark, in the first place, that the desire for *organic changes in the constitution* is not strong or general. No jealousy exists of the limited and regulated influence of the crown, exercised as it is by a deservedly popular sovereign, well understanding the spirit of constitutional royalty. The foundations of our parliamentary constitution are deeply cast in the confidence and affections of the people. The Reform Act has, for the present at least, been a *final* measure. It has satisfied the large towns, and has produced a House of Commons which moves in accordance with public opinion, and reflects its varying hues with sufficient fidelity. For the repeal of the rate-paying clauses of the Reform Act, there is a desire among certain classes of the population. Of household suffrage and annual or triennial parliaments much has not been heard of late. Short periods of parliament would tend to produce a more frequent change of members, which would lower the standard of efficiency and diminish the value of the services obtained. In the county constituencies, the working of the Chandos clause creates a constant friction between landlord and tenant, and in cases where coercion is practised, creates a desire for the protection of the ballot.

With respect to our *foreign relations*, we may begin by adverting to the generally pacific tendency which is now observable in the relations of civilised states. This tendency, which has been visibly on the increase since the peace of 1815, is owing to the concurrence of several causes, among which the

facilities afforded for intercourse by steam navigation and railways, and the improvement of roads, hold a prominent place. The removal of restrictions from commerce, so far as it has proceeded, contributes likewise to the same end. The increased activity and power of the newspaper press has also, by creating a sort of European opinion, brought nations and governments into closer contact with one another. Governments too are grown more formidable, and understand better how to wield the national strength at their disposal. No nation now will lightly provoke a general war, or can venture to reckon on coming out of the contest without some serious wound. The wars of the French Revolution and Empire have at least taught nations how hard blows are to be struck. War is no longer a question of the loss or gain of a border fortress: national honour, and even national existence, are at stake. Besides, the calamitous conflicts which ended in 1815 have certainly diffused throughout Europe (notwithstanding the large standing armies of the Continent) a strong conviction of the folly and hazard of wars between civilised nations: of the certain loss and the very doubtful gain. The chronic warfare which is waged with barbarous nations, as our own in India and at the Cape, that of the French in Algeria, and that of the Russians in the Caucasus, constitutes a sort of by-play in the great drama of the world, and does not interrupt the general tranquillity. As to the United States, their situation and political constitution alike unfit them for engaging in an European war, and a sufficient field is open to their energies in the absorption of the feeble Spanish provinces to the south.

A temporary, though we trust only a temporary, interruption of the peace of Europe has been created by the civil war which has recently broken out in Switzerland. The internal dissensions of this country (a lucid and impartial narrative of which we owe to the historical pen of Mr. Grote), originating ultimately in a narrow spirit of Catholic bigotry, and in the machinations of the Jesuits, have terminated in civil war, owing to the defective constitution of the Swiss Federation. We sincerely trust that the mediation of the great powers, which has been offered to the contending parties, will lead to an amendment of the Federal Pact on equitable terms. Against the deplorable confusion of Spain, produced by the short-sighted and unscrupulous selfishness of Louis Philippe, we may set off the dawn of brighter prospects in Italy, the probability of a more cordial union of its different states, of a more confiding spirit in the governments towards the people, and of a more sober and moderate spirit in the people towards the governments. There

are the seeds of great things in Italy, which, though long stifled and inert, still retain their vitality.

Our extensive *colonial empire*, consisting of numerous communities, distant from each other, and dissimilar in laws, manners, climate, population, and language,—is necessarily exposed to many casualties. At present, however, it is in a state of quietude, and requires only the ordinary attention of the mother country. The colonial administration of Lord Grey has given satisfaction, so far as its results have been hitherto developed, and we have seen with much joy his departure from the practice of appointing military officers to conduct the civil government of colonies. India, likewise, after having lately caused so much anxiety, and so many conflicts, is now pacified; and we trust that the able governor-general—not selected on any narrow party ground—who has recently gone out, will be able to cultivate with success those arts of peace, which are so much needed in the vast territories under his control. The cost of the civil government of the dependencies of the English crown is principally defrayed from the local revenues; their chief expense to the mother country consists in their naval and military defence. We perceive that the attention of the government has been directed to the diminution of the latter head of expense, by affording means in some colonies for the organisation of a native armed force. The total expense of our large colonial possessions to the imperial treasury is, however, considerably less than the small and comparatively worthless settlement of Algeria causes to France.

The important subject of *Ireland* is treated in another article, where we have given a full account of the measures recently adopted for the relief of the distress caused by the failure of the potato in 1846 and 1847.

Owing to the mode in which Ireland has been settled*, to the repeated confiscations, and the grants of large tracts of country to Englishmen, many of the landlords are absentees, managing their estates by agents, as if they were colonial plantations,

* The chancellor Clarendon thus sums up his account of the scramble for land which took place in Ireland in the reign of Charles II: — 'In a word, all men found that any settlement would be better than none; and that more profit would arise from a smaller proportion of land quietly possessed and husbanded accordingly, than from a much greater proportion under a doubtful title, and an incertainty, which must dishearten any industry and improvement.' Life, p. 133. We rejoice to think what new honours the name of Clarendon is now acquiring in a far more arduous re-settlement of Ireland than was ever attempted before.

advancing no capital for their improvement, and merely drawing their rent like a half-yearly tribute remitted to a distant sovereign, or a land-tax paid to an oriental government. Most resident landlords have imitated this system, and the established rule of managing landed property in Ireland is, that permanent improvements are not made by the landlord. This short-sighted system has continued unaltered for a long time, but its evils have at length become almost intolerable: and the recent extension of the Poor Law appears likely to bring matters to a crisis. The remedy for this disastrous state of things is not to be found in the general introduction over Ireland of the tenant right of Ulster, under the compulsion of the legal sanction. If this plan means any thing, it means that the rights of the landlord in the soil, and his interest in it, are to be still further reduced, and that the tenant, provided he fulfils certain easy conditions, is to hold in perpetuity. It appears to us that this plan proceeds in the wrong direction; it complicates still further a system of tenure already in a state of serious complication, and it substitutes for one set of needy landlords another set still more needy. Besides, as Cæsar said, if we are to commit a crime, let it be for supreme power; if the government is to interfere with rights of property, let the interference be at least beneficial and effective. We think that the true course of policy is indicated by the Encumbrances Bill of last session.

It is to measures of this kind, calculated to act, indeed, slowly, but to touch the causes of Irish misery and disorder, that we are to look for a diminution of murders and outrages in Ireland, by extinguishing the motives out of which these crimes spring. Nevertheless, until this slow process can be effected, it is the duty of the government to use all available means for protecting life and property in Ireland; especially at a time when the potato-famine and the system of public grants, combined with the agitation for tenant-right, have disorganised society, and aggravated all the incentives to crime.

The question of the Irish Church cannot be omitted in the consideration of any set of measures which profess to aim at the settlement of Ireland. It is puerile to expect that the Roman Catholic body of Ireland will ever permanently acquiesce in seeing the entire ecclesiastical endowment appropriated exclusively to a small minority of the population, while the church of the large majority is wholly unendowed. It is our firm conviction, that unless some legal provision is in some way made for the Irish Catholic Church, the Irish Established Church will, before many years are over, be deprived of its

endowments. We know how unfavourable a moment this is for attempting to approach this question, and we readily admit, after the late decisive exhibition of feeling in this country, that Mr. Pitt's plan, of endowing the Irish Catholic clergy from the national exchequer, cannot be carried into effect. We think, however, that some provision from the local taxation of Ireland is, on grounds both of justice and policy, due to the Catholic church of that country; and we may take this opportunity of stating, that however little we concur in Lord G. Bentinck's political opinions, we cannot but admire the boldness with which he recently expressed himself on this subject, at a time when the popular feeling was running strongly in the opposite direction.

We turn next to the leading questions of our *internal administration.*

The subject of criminal codification or of digesting the statute and common law for all purposes of criminal jurisdiction, has recently made a decided progress, both in theory and practice. The superstitious terror with which a code used to be regarded, as something foreign and dangerous, has nearly given way, among the bar and the public, to a more enlightened view of the advantages of legislative simplicity and order. The difficulty has been to obtain a well-constructed and complete digest of our miscellaneous and scattered law; but this difficulty has, to a great extent, been overcome by the useful labours of the Criminal Law Commissioners. A criminal code, in the form of a bill, was laid upon the table of the House of Lords by Lord Brougham, two sessions ago, but no steps were taken for its consideration. To discuss a code of this kind, article by article, in committee, in both Houses of Parliament, would be a simple impossibility. If such a compilation is ever to receive the sanction of our legislature, it can only be done by some departure from the ordinary mode of discussion.

The desire for the abolition of capital punishments appears to have received a check from experience; and it seems to be generally admitted that, for the present at least, we have gone sufficiently far in the mitigation of punishments. It is likewise now understood that *certainty* is the most material element in the punishment of crime: hence the institution of trial by jury for criminal offences has of late been sometimes spoken of without that language of hyperbolical admiration which had usually been consecrated to its praise. We are not blind to the practical advantages which trial by jury, after long habit, produces in this country, even in the ordinary administration of justice; and we are fully sensible of the protection which it has

formerly afforded to the subject, in political cases, against the power of the Crown. But because trial by jury may be a palladium of liberty in prosecutions for treason, sedition, riot, political libel, and other questions between the government and the people; it does not follow that this mode of trial is attended with any advantages in indictments for burglary or larceny, and in actions of assumpsit or ejectment. Nobody ever complained of the Court of Chancery for its subservience to the Crown, when deciding between the rights of litigants; although this Court was not only never assisted by a jury, but was subject to the further anomaly of being presided over by a judge, who, on becoming the first judicial magistrate in the realm, is yet not expected, on that account, to cease to be a party politician. Certainly, if it were now proposed, for the first time, to take twelve individuals at random from the community — to give them practically, under the form of a general verdict, supreme authority over both law and fact, in civil and criminal trials, being persons necessarily without any legal experience, and any sense of corporate responsibility — and as an additional security for a just decision, to require that these twelve men should be locked up without food until they were unanimous in their opinion, such a proposition could not be expected to meet with a very favourable reception. With respect to secondary punishments and transportation, we refer to the article in our July number, where the subject was fully considered (No. 173. art. 10.). The aim of the government in converting transportation into a sort of penal exile, to be added to a term of imprisonment at home, seems to us right; about the mode of giving effect to it, difference of opinion may reasonably exist.

By the change effected in last session the administration of the *Poor Law* has obtained a direct representation in parliament, and has been connected with the government by a political tie; so that the responsibility of the ministry for the acts of the commission, and the responsibility of the commission itself to parliament, will henceforth be clear and undoubted. This change was rendered necessary by the recent misunderstandings in parliament respecting the proceedings and management of the Poor Law Commission, which gave to the administration of the poor law in the country an appearance of unpopularity and disorder which was quite unreal. No alteration has taken place in the powers of the commission, or in its relation to the Boards of Guardians; nor has any change been made in the system of relief in England. The discussions of last session on the Irish Poor Law have tended to show the advantages of the mixed system of workhouse and out-door relief established in England,

and to confirm it in the opinion of parliament and the public; nor do we anticipate any proposal for its modification. The evils of the law of Parochial Settlement have, however, begun to make themselves understood, as well as felt; and after the full investigation which the subject received from the select committee of the House of Commons in last session, we look forward to a fundamental change which will release industry from the fetters now imposed upon it by this law, and will, at the same time, create a more equable distribution of the local burden of the poor rate. We trust, likewise, that the alteration of the law of settlement, whenever it takes place, will be accompanied with a reform in the system of valuation for the local taxes: the valuations for these several rates ought, we think, to be consolidated, and placed under the control of a board of magistrates in each county. The influence of the law of settlement upon the condition of the working classes is so important, that we intend, on an early occasion, to consider the subject in a distinct article.

The *factory legislation* of last session, by which the long-demanded limitation of the time of work to ten hours was effected, though considered by many of its supporters as a politic concession to the wishes of the operatives, is not to us a subject of satisfaction. We stated fully, in a former number, our reasons for disapproving of a limitation of the hours of work for free adult labourers, which we need not now repeat.* It seems as if, in the inevitable succession of human delusions and errors, one false system of political economy must be enthroned as soon as another has been deposed, and that the system of commercial protection is to be immediately followed by the system of protection for labour. We fear that the parties interested, and that portion of the public which is captivated by an outward semblance of humanity, will never be convinced of the unsoundness of this novel system by any *à priori* arguments; and that we are destined to run a long career of legislative protection to labour, not confined to manufacturing industry, until actual experience, as in the case of protection to trade, has demonstrated its mischievous operation.

The question of *sanitary regulation* for populous towns has of late occupied a large share of public attention, though not larger than its importance deserves. In London, and other great towns (particularly the growing towns of the manufacturing districts, inhabited by large bodies of the working classes), the

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* See vol. lxxxiii. p. 88.

arrangements for sewerage and drainage, and the supply of water, exercise a perpetual influence upon the health, comfort, and even morals of the population. We trust that judicious regulations for effecting these useful objects will be agreed to by the legislature. For smaller towns and villages such sanitary measures are less needed, and there would be little advantage in subjecting the municipal authorities to external control. The interference of a central authority with the local administration of sewers and other sanitary matters, is a question of great difficulty, particularly in the metropolis, where we rejoice to see that the subject is to be investigated by a special commission; and we cannot but think that the government has been unjustly blamed for postponing their bill of last session, the continued discussion of which only served to show the number and variety of interests to be affected by the proposed enactment.

The *internal communications* of a country always constitute one of the main branches of its public economy; and at this moment they are a subject of peculiar interest and solicitude, inasmuch as they have been, or are in the course of being, revolutionised by the universal diffusion of steam railways. The transfer of the traffic on all the main lines of communication from the turnpike roads to the newly-constructed railways has materially diminished the produce of the turnpike tolls, and has rendered many trusts nearly incapable of maintaining their roads and paying the interest on their debt. A general measure for England, similar to that for South Wales, by which the Rebecca disturbances were effectually pacified, seems to be desirable, and indeed almost inevitable. At the same time, steps should be taken for consolidating into larger districts the management of the parish highways, which is now costly and ineffective.

The extent to which the management of railways for passengers shall be subject to the control of a government authority is a question which will, we presume, come on for discussion in the present session of parliament. That *some* control should be exercised by the government over these mighty engines of transport seems to be generally conceded. We confess that we can see no strong reason for so extensive an interference with the discretion of the boards of directors as appears to have been at times contemplated by persons whose feelings have been powerfully affected by the recent details of some railway accident; and we decidedly think that the management of steam-vessels for passengers requires the control of the government quite as much as the management of railways. It is to be regretted that

no person, having a special and professional acquaintance with the subject, has attempted to investigate the practical question of the proper extent of government control over railways and steam navigation.

In *commercial legislation* our ulterior progress has been checked by the very cause which, in 1846, gave it so strong an impulse. If to the potato failure and the Irish famine we owe the repeal of the corn laws, and the accompanying reforms of the tariff, to the same causes we must trace the increased public expenditure, and (in part) the disturbance of trade and private credit which have since taken place, and have paralysed all commercial reform. The public revenue has, till lately, kept up, in a remarkable manner, under the most unfavourable circumstances, and has borne a striking testimony to the soundness of the principles adopted in the recent changes. But the necessity for large extraordinary grants to Ireland, the high price of cotton, and the consequent contraction of the cotton manufacture, and the disturbance of trade and credit by the scarcity of food and the enormous speculations in railways, have produced a financial state which does not permit of the reduction of duties, except in cases where it will not be followed by a diminution of revenue. The equalisation of some of the colonial discriminating duties, and the reduction of those duties which are so high as to create systematic smuggling, fall under this latter head. A new relation, which promises to be highly beneficial to all parties, will probably shortly be established between western Africa and the West Indies. The revision of the navigation laws, and the introduction into our maritime code of a less vexatious and narrow-minded spirit than that which animates our present system, is likewise a task which now calls for the exertions of the commercial reformer. With respect to the completion of the work of commercial reform begun by Sir Robert Peel, we exhort the present government to bear in mind the compliment paid to Sixtus V. on the completion of St. Peter's: —

> Magnus honos magni fundamina ponere templi,
> Sed finem cœptis ponere major honos.

We may add, that a review of our revenue system will be naturally suggested by the questions growing out of the Income Tax, which must, unless it is abandoned, be renewed in the present session.

The subject of *monetary affairs* is too complex and extensive to admit of more than a passing notice in this place. We may, however, state our opinion, that the inordinate speculations in railways, both English and foreign, and the unprecedented

amount of capital which they absorbed, were among the main causes of the late crisis in the money market. The derangement of trade, by the necessity of importing vast supplies of grain, in order to fill the vacuum created by the destruction of the potato crop, likewise contributed to the same end. The storm produced by these concurring causes was sufficient to try severely the soundness of all mercantile and banking establishments, and to sweep away those houses which had subsisted mainly on credit, and whose capital was locked up in distant investments. How far the Bank Charter Act and the conduct of the Bank directors may have assisted in aggravating these difficulties, is a question which will form the subject of investigation by the Select Committees recently appointed by both Houses of Parliament. We will only make this one remark: viz., that if the *currency* had been in an unsound state, and if the law regulating the issue of paper money had been defective, it can scarcely be doubted, that many private and country banks would have shared in the prevailing discredit. The inquiries of the committees just referred to will, we presume, be directed mainly to the *banking* operations of the Bank of England.

We will lastly offer a few remarks upon the present position of the incessantly agitated questions which grow out of the *relation of church and state.*

During the late elections, a powerful movement has been made by the nonconformist body of England against the principle of ecclesiastical endowment, and also in favour of the separation of church and state. This movement, so far as it consisted in an opposition to the endowment of the Irish Roman Catholic clergy, has been seconded by a portion of the Established Church of England, and by the Presbyterians of Scotland of all denominations. The English dissenters have not always been consistent in the grounds of their opposition to the endowment of the Roman Catholic church of Ireland; for they have often spoken of it as an encouragement of error by the state, while at other times they describe endowment as benumbing and paralysing the truth which it professes to diffuse. For our own part, if we are favourable to the principle of religious endowments, it will not be so much on the ground that they diffuse the endowed creed, as by reason of their tendency to raise the moral character both of the instruction afforded and of the ministering clergy. Not conceiving that parliament is a synod of divines, or that it represents the different churches of this country in their *religious* capacity, we wish to see it apply this principle upon grounds of comprehension similar to those which

were approved of by the Whig school of theologians at the period of the Revolution.

The cause of *national education* has made great progress since 1841; when a certain degree of superintendence over it was lodged in the committee of the privy council. The grant annually voted by parliament is now administered by the committee of council in a sort of partnership with the representatives of the religious body to which the school receiving assistance may belong. This system has at length received the cordial support of the heads of the church of England; whereas the ultra nonconformists repudiate it, as a supposed interference with freedom of belief and conscience. In Ireland, on the other hand, the national system is so administered as to be fair and satisfactory to the Roman Catholics and Presbyterians, by whom it is most needed; but it has hitherto been objected to by the members of the Established Church, who, it may be observed, are in general sufficiently wealthy to educate the children of their own communion without the assistance of the state. If the English dissenters are of opinion that the administration of the grant for education is unduly favourable to the Established Church, their opposition to it is quite intelligible; but we confess we are unable to comprehend the force of the objections which they have made to *all* state assistance for purposes of popular instruction. The patronage of learning, science, and literature has always, from the time of Augustus downwards, been considered one of the main duties and merits of a government: the encouragement afforded to letters has been a standing theme of praise for kings and statesmen for centuries. Universities, high schools, and other institutions for the cultivation of learning, have been systematically supported, both with money and favour, by all European princes. On what ground, therefore, can it be now maintained that the state is to assist in the instruction of the more wealthy, but not in that of the poorer classes; and that it is to promote the discovery of truth, but not to aid in its diffusion?

Whatever remnants of religious intolerance and inequality in civil matters still subsist, are chiefly found lurking in certain religious tests imposed by means of *oaths* and *declarations*. Oaths may perhaps be useful in the administration of justice, and at all events the penalties of perjury, for false evidence, must be retained; but all promissory oaths, on entrance into office and other public functions, are, in our opinion, wholly futile as a security against misconduct, and ought to be swept away.

With respect to the state of the *English Universities*, we regret that the education which they afford should be to so large an extent ecclesiastical, that laymen should not possess

some share in their management, and that they should wear so much the character of mere seminaries for the Anglican Church. The influence exercised by the two great universities, as training schools for a large proportion of the young men of the upper classes, just before their entrance into active life, can scarcely be overrated. From the chambers, we might almost say from the cells of Oxford, has of late years issued the Tractarian or Puseyite School; a school of theology not merely Laudite, for Laud was decidedly anti-Roman, but essentially attached to the doctrines and discipline of the unreformed Western Church; abhorring every thing which is distinctive of Protestantism, even to its name; seeking to set the Church over the State, and internally desirous of a re-union with Rome. This tendency, wholly unsuited to an age devoted to a spiritual religion, and intolerant of ceremonies and forms in matters both ecclesiastical and civil, has unfortunately spread considerably among the younger clergy, though it has found but little favour among the laity; it has added another to the already numerous grounds of religious discord, and has widened the breach between the Church and the Dissenters.

Out of the antiquarian tendencies of this school, and its sympathies with the church of the Middle Ages, has proceeded a small political sect or connection, which from the age of its principal members has acquired the name of the Young England School. This school bears little resemblance to the corresponding tendencies of the Continent, from which its name was borrowed. Young France, and Young Italy, are democratic, and almost jacobinical; great contemners of kings and nobles and priests: Young Germany, though more fantastic, and with more historical eccentricities, has at the bottom the same character. But Young England is essentially aristocratic and feudal. It wishes to reconstitute society according to the medieval model: to form a community in which, a king, armed with pre-eminent powers, is surrounded by a few great nobles, who stand at an immeasurable height above the rest of the people. The only other power in the state which the Young Englanders recognise is that of the Church, which they endow richly, surmount with a numerous and well-appointed episcopate, and commit to it, besides its proper religious functions, the cultivation and control of all education, literature, science, art, and public charity. Their speculations are not enounced in a dogmatic form: they come forth disguised in poems, tales of fiction, or plaintive laments over the degeneracy of the present prosaic incredulous age; but their view of society seems not unaptly represented by the Grand Seigneur of the stage, who, with an air of con-

scious superiority, and surrounded by his smiling villagers, distributes marriage portions to some, and rewards to others, to the sound of the pipe and tabret. Every thing that belongs to trade; smoky towns, cotton-mills, manufactures, steam-engines; every thing which concerns that unpoetical order of the community, the middle classes — is an abomination in their sight. For the labouring class, provided it keeps its proper place, they express a strong sympathy. There is, therefore, a varnish of democracy over their aristocratic nucleus. They sympathise with the upper classes — the middle classes they despise: — as to the inferior class, their affections are divided, and they compromise the matter thus. They think that the agricultural labourers should be the contented serfs of the landed aristocracy, but that the operatives should be the masters of the manufacturers. Their manual of political economy appears to be compounded of Goldsmith's Deserted Village, and Southey's Colloquies of Society. The teachers of this school do not, indeed, produce any serious practical impression upon the convictions of this hard-headed generation; they do not persuade the world to return to the principles and practice of the fourteenth century; but they deter it, so far as they are able, from governing on principles suited to the nineteenth. They do not so much inculcate a body of positive doctrine, their task is rather to 'perplex 'and dash maturest councils;' and they succeed to a considerable extent in augmenting the anarchy of opinion, by which the moral world is now so much distracted.

There is a perpetual tendency in political affairs to a reliance upon antiquated maxims; men are prone to apply to the present time, without correction, the formulas which obtained a currency under a former, but different state of things. It is a legal proverb, that '*Cessante ratione, cessat et ipsa lex;*' but the canons of legislation, the *leges legum*, generally survive the causes out of which they originated. For example, there was a time when the Pope wielded a formidable power; when the Protestant Church of this country was in real danger from the machinations of the great Roman Catholic states, and from the treachery of our own kings. During this period, the Whigs wisely took measures to avert the danger; while the Tories became Jacobites, and were intriguing to place a Roman Catholic on the throne. Now that the Pope is powerless, and the Roman Catholic states do not dream of attacking the Protestantism of England, the Tory has taken up the discarded Whig principles of the last century, and talks of the Protestant Succession, the Coronation Oath, and the glorious Revolution of 1688. In like manner (as we have remarked

above), much of our veneration for trial by jury as a mode of settling common indictments and actions in the nineteenth century, is taken from our recollections of the effective protection which it afforded against the overweening power of the Crown in the seventeenth and eighteenth centuries.

Thus every generation, in succession, runs a risk of being sacrificed to a sort of after-wisdom, and of being governed by maxims which a former generation rightly adopted, but which are no longer applicable. In the mean time, it is no easy task to apprehend with accuracy the moving panorama of the present. For this purpose, not only an attentive and wide-ranging observation is necessary, but also an active imagination, in order to summon up before the mind a vivid and complete picture of the contemporaneous state of things; and to people the entire circle of the horizon with living objects. Hence the profound remark of Turgot, that, in politics, on account of the slowness with which the rays of fact travel to the eye, it is necessary *to predict the present.*

Nothing would more conduce at present to the public welfare than a prevailing disposition to recognise certain maxims of legislation, not derived from a blind and passive tradition, but forged anew, by actual labour, out of recent facts, and adapted to the exigencies of our modern societies. No mistake can be greater than to suppose that an unchanging is necessarily a conservative policy, or that new dangers can be always averted by old securities. A fortification which was impregnable by the spear and the arrow, may be worthless against cannon. While society is changing its aspect around us, the principles by which society is governed must be renovated by assiduous inspection. It is true, that even if such guides to legislation were generally admitted, there would still be much difficulty in applying them in practice; but discussions in parliament would be more likely to lead to a useful result, if there were more agreement about principles. The present is a favourable time for prosecuting such researches. The fanaticism about political forms, and the tendency to expect that good laws will be produced mechanically by a good constitution of the legislature, is greatly diminished. People have begun to see, that though some governments are nearly always bad, none are always good. There is neither a royal nor a democratic road to perpetual good government. This, however, only renders it the more necessary to use all practicable means for insuring a progressive improvement of our laws and institutions, and not to imitate the sluggish folly of the Roman emperor, of whom Tacitus says, that he thought by postponing the remedies, he could drive off the evils themselves.

ART. V. — *KOSMOS, Entwurf einer Physischen Weltheschreibung,* VON ALEXANDER VON HUMBOLDT. Ersten Band, Stuttgart und Tübingen. J. G. Cotta'scher Verlag, 1845.

COSMOS. Sketch of a Physical Description of the Universe. By ALEXANDER VON HUMBOLDT, Vol. I. Translated under the superintendence of Lieut. Colonel EDWARD SABINE, R. A., For. Sec. R. S., London. Printed for Longman, Brown, Green, and Longman, Paternoster Row, and John Murray, Albemarle Street, 1846.

KOSMOS, the adornment, the orderly arrangement, the ideal beauty, harmony, and grace, of the universe! Is there or is there not in the mind of man a conception answering to these magnificent, these magical words? Is their sound an empty clang, a hollow ringing in our ears, or does it stir up in the depths of our inward being a sentiment of something interwoven in our nature of which we cannot divest ourselves, and which thrills within us as in answer to a spell whispering more than words can interpret? Is this wondrous world of matter and of thought, of object and of subject, of blind force and of moral relation, a one indivisible and complete whole, or a mere fragmentary assemblage of parts, having to each other no inherent primordial relations? If the former, contradiction and ultimate discordance can have no place. All that is to us enigmatical *must* have its solution, however hidden for a while the word which resolves the riddle. All that shocks us as irreconcilable, *must* admit of satisfactory interpretation could we read the character of the writing with ease and fluency. If the latter, Chaos is a reality, Polytheism a truth; since arbitrary, self-existent, and independent Powers must, on that view of the subject, agitate, without end and without hope of final prevalence, the field of Being.

It is something to have put the question in this form, uncomplicated with the idea of responsibility for its answer to any tribunal but that of the pure reason and the inborn feeling. So put, we might well leave it to be decided by the acclamation of the human race, were it not for the healthful and invigorating exercise of our faculties, and the rich enjoyment it affords to pass before us in review those grand features in the constitution of the frame of Nature which render the conclusion irresistible, and invest it with the character of a demonstrated truth rather than that of an admitted opinion.

It is true that to grasp, as by a single mental effort — to embody and realise to our conceptions the UNITY OF NATURE

— to soar so high as to perceive its completeness, and enjoy the fulness of its harmony, is given neither to Man nor to Angel. The feebleness and limitation of our faculties repress such longings as presumptuous, and forbid such flights as impracticable. Yet to spring a little way aloft — to carol for a while in bright and sunny regions — to open out around us, at all events, views commensurate with our extent of vision — to rise to the level of our strength, and, if we must sink again, to sink, not exhausted but exercised — not dulled in spirit but cheered in heart, — such may be the contented and happy lot of him who can repose with equal confidence on the bosom of earth, though for a time obscured by mists, or rise above them into empyrean day.

To some it is given to soar with steadier wing and more sustained energy; to sweep over ampler circles and treasure up the impressions of more varied imagery. To such the ambitious but sublime idea may occur of attempting to throw off, in broad and burning outline, a picture of THE WHOLE as it has presented itself to their aspiring conceptions. Far be it from us to reprove such aspirations. Their failures may yet be immeasurably grander than our best successes; and, as we contemplate them, a glimpse, a shadow, may impress itself which may aid us to remodel our own conceptions according to a higher ideal than any we could have formed from our more limited opportunities. Such outlines, struck with a bold hand and true to nature, though confessedly imperfect and partial, suggest in their turn, to imaginative intellects, groupings and combinations of a more recondite and deep-seated order. Transplanted onward, thus, in progressive development from observer to observer, and from mind to mind, with a constant reference to nature and experience as their prototype, it is easy to see how, while gaining in comprehensiveness, they may lose at every transfusion somewhat of their specialty, without a corresponding loss of general truth; and how, thus, a larger and more entire conception of nature in itself may by degrees arise, and come to be recognised as the common property of humanity, the permanent and ennobling inheritance of generation after generation to the end of time.

The difficulties to be encountered in such an attempt are of two opposite kinds; on the one hand that of embracing with distinctness and truth a sufficiently extensive view, on the other that of duly suppressing detail. Such a view of nature, to be in any way successful, ought to be, in the highest possible sense of the word, *picturesque*, nothing standing in relation to itself alone, but all to the general effect. In such a picture every object is suggestive. However beautiful in itself, it is less for the sake

of its intrinsic beauty than for that of the associations it calls up, and the lights which it reflects from afar, that it holds a place as an element of the work. And, as in art, intense and elaborated beauty in any particular defeats picturesqueness by binding down the thought to a sensible object, annulling association, and saturating, as it were, the whole being in its single perception; so, in throwing off such a picture of nature as the mind can take in at a view, no one portion can be suffered to appear in single completeness and ideal rotundity. Nature, indeed, offers all in her profusion, and complete in all its details; and the contemplative mind finds among them paths for all its wanderings, harmonies for all its moods. But such exuberance is neither attainable nor to be aimed at in a descriptive outline, where leading features only have to be seized, which imagination is stimulated to fill up by the grandeur of the forms, and the intelligible order of their grouping.

The origin and fount of all good writing, however, is sound and abundant knowledge. To the successful execution of such a work, a thoroughly scientific acquaintance with each component feature; a mind saturated with information, and at home in every department, is above all things requisite. The classifications of the naturalist, the surveys of the geologist, the catalogues and descriptions of the astronomer, the theories of the geometer, and the inductions of the experimentalist, must all be alike familiar, and not merely ready at a call, but present to the thought at every instant. It is, therefore, by no simply clever writer, by no mere man of vivid imagination and fluent command of language and imagery — least of all, by any ideal speculatist who may have devised a system of philosophy spun from the abstractions of his own brain, and resolving all things into some single principle, some formula embodying all possible knowledge, that such a work can be entered upon without the certainty of utter and disgraceful failure. The highest attainments in science, though necessarily inadequate to complete success in such an attempt, can alone save the adventurous mortal who shall make it from merited reproach on the score of presumption.

The author of the remarkable book before us is assuredly the person in all Europe best fitted to undertake and accomplish such a work. Science has produced no man of more rich and varied attainments, more versatile in genius, more indefatigable in application to all kinds of learning, more energetic in action, or more ardent in inquiry; and, we may add, more entirely devoted to her cause in every period of a long life. At every epoch of that life, from a comparatively early age, he has been

constantly before the public, realising the ideal conception of a perfect traveller; a character which calls for almost as great a variety of excellencies as those which go to realise Cicero's idea of a perfect orator. To such an one science in all its branches must be familiar, since questions of science and its applications occur at every step, and often in their most delicate and recondite forms. The habit of close attention to passing facts, which seizes their specific features, and detects their hidden analogies, must join with the broad *coup d'œil* which generalises all it sees, and stereotypes it in memory in its simplest and most impressive forms. To these must be added a knowledge of man and of his history in all its phases, social and political; a ready insight into human character and feelings, and a quick apprehension of local and national peculiarities. Above all things is necessary a genial and kindly temperament, which excites no enmities, but on the contrary finds or makes friends every where; in presence of which hearts open, information is volunteered, and aid spontaneously offered. No man in the ranks of science is more distinguished for this last characteristic than Baron Von Humboldt. We believe that he has not an enemy. His justice, candour, and moderation, have preserved him intact in all the vexatious questions of priority and precedence which agitate and harass the scientific world; and have in consequence afforded him innumerable opportunities of promoting the objects and befriending the cultivators of science, which would never have fallen in the way of a less conciliatory disposition, and of which he has not been slow to avail himself. The respect of Europe, indeed, has gone along with him to a point which has almost rendered his recommendations rules. It has sufficed that Von Humboldt has pointed out lines of useful and available inquiry, to make every one eager to enter upon them.

The idea of a physical description of the universe, as a work to be accomplished, and an object, to amass materials for which during a whole lifetime, would be a worthy and satisfactory devotion of it, had, it appears, been present to his mind from a very early epoch. For almost half a century, indeed, it had occupied his thoughts. At length, in the evening of life, he felt himself rich enough in the accumulations of thought, travel, reading, and experimental research, to reduce into form and reality the undefined vision which had so long floated before him. Not entirely, however, without some preliminary trial of strength. A course of lectures, as he informs us, had been delivered by him, both in Berlin and Paris, on the subject, about the end of 1827, previous to his departure for Northern Asia,

a journey for which he had prepared himself by a course of study without example in the history of travel. On his return, after giving to the world the results of that journey, or rather the epitome of all the knowledge acquired by himself and by former travellers on the physical geography of Northern and Central Asia, in a work which would alone have sufficed to form a reputation of the highest rank; he resolved no longer to defer this realisation of his early aspirations, and the result has been the work of which the volume now before us is only a commencement.

Though we cannot blame an arrangement which brings any portion of the fruits of M. de Humboldt's labours earlier before us, though aware of the hazard which passing years entail on the ultimate appearance of a work of great extent deferred already so long; and though only too glad to receive by instalments, at the convenience of the author, the payment of a self-imposed debt of such magnitude and value, yet we cannot but consider the publication of the three volumes, of which it is understood the whole will consist, separately and at long intervals, as in many respects unfortunate. Although it is now nearly four years since the work was completed, the second volume is only just on the eve of publication, and the third may possibly be yet longer delayed. Yet no work could have been undertaken, in which it would appear so needful that the impression produced be one and undivided, the unity salient and conspicuous. That the contrary course, though perhaps unavoidable, has been pursued, renders the task of duly appreciating and correctly criticising it doubly difficult; since it is impossible to say to what extent, and in what manner many things, which appear in the light of omissions in the first portions of such a performance, may be supplied in the sequel; or how differently the philosophy of the whole subject may come to be judged as presented by the author on a complete and on a partial view of his entire meaning. This would have been less the case, and the probability of doing injustice to the author's philosophical views greatly diminished, had the general plan of the whole work been chalked out with more precision in the introductory portion, and the nature of the contents of the subsequent volumes indicated in somewhat less vague and general terms than we find them actually to be. And the necessity for thus holding a reserve on our judgments in this respect, while considering that portion of the work which we possess, is the more imperatively pressed upon us, inasmuch as the scope of the proposed third volume as we understand it, seems to us by far the most important in its philo-

sophical bearings, and as that by which the character of the whole as a great philosophical work will of necessity come to be finally judged.'

Such, however, we are aware, is not exactly M. de Humboldt's own impression. He must here be allowed to speak for himself: 'The first volume,' he says, 'contains a general view of 'nature, from the remotest nebulæ and revolving double stars, 'to the terrestrial phœnomena of the geographical distribution 'of plants, of animals, and of races of men; preceded by some 'preliminary considerations on the different degrees of enjoy-'ment offered by the study of nature and the knowledge of her 'laws; and on the limits and method of a scientific exposition 'of the physical description of the universe. I regard this as 'the most important and essential portion of my undertaking, 'as manifesting the intimate connexion of the general with the 'special, and as exemplifying, in form and style of composition, 'and in the selection of results taken from the mass of our expe-'rimental knowledge, the spirit of the method in which I have 'proposed to myself to conduct the whole work. In the two 'succeeding volumes I design to consider some of the particular 'incitements to the study of nature, — to treat of the history of 'the contemplation of the physical universe, or the gradual 'development of the idea of the concurrent action of natural 'forces (Kräfte), co-operating in all that presents itself to our 'observation; and lastly, to notice the specialties of the several 'branches of science, of which the mutual connexion is indicated 'in the general view of nature in the present volumes.'

A large portion (nearly one-fifth of the text) of the volume before us, is occupied with an introductory exposition of the various kinds or gradations of enjoyment afforded by the contemplation of nature and the investigation of her laws, and with an essay on the limitation and methodical treatment of a physical description of the universe considered as a separate and independent science — 'the science of the Kosmos.' The mere aspect of nature, as has been often and well observed, is a source of positive and high enjoyment; and exercises, even on rude minds, and under the sway of wild passions, if only suffered to claim attention at all, a calming and elevating influence. In all her scenes, 'there is everywhere revealed to the mind an 'impression of the existence of comprehensive and permanent 'laws governing the phœnomena of the universe;' before the idea of whose vastness and regularity the turbulence of human passion feels itself reproved and shrinks abashed. Whatever be the peculiar inherent or temporary character of the scene contemplated — even in her most agitated moods — this sense of

the regulated and the imperturbable is never wholly effaced. We know that the storm will rage itself to rest, the angry billows subside, the earthquake roll away, and that holy calm which is her habitual mood be restored as if it had never been broken. 'That which is grave and solemn in such impressions 'is derived from the presentiment of order and of law, unconsciously awakened by the simple contact with external nature; 'it is derived from the contrast of the narrow limits of our 'being with that image of infinity which everywhere reveals 'itself—in the starry heavens, in the boundless plain, or in the 'indistinct horizon of the ocean.'

Enjoyment of a different, and, in some respects, of a richer, because of a less overwhelming and more exciting kind, is that which depends on the peculiar physiognomy of natural scenes. Harmonising, like music, with internal trains of thought and imagination, and with every conceivable state of mind, they awaken of themselves, as soon as presented, sentiments congenial to them, and lead the spirit, by strong associative links, through every phase of feeling. The barren monotony of one region, the varied fertility of another, the gloomy and romantic horrors of a third—the peaceful dwelling rising by the torrent's side—the misty region, where the mule seeks his track amid eternal snows—the tropical night, 'when the stars, not sparkling as in 'our climates, but shining with a steady beam, shed on the 'gently heaving ocean a mild and planetary radiance,'—the deep and doubly wood-clothed valleys of the Cordilleras—the volcanic peak cleaving the clouds, from a base of vineyarded slopes and orange-groves washed by a tropical sea—the dense forest, of giant and primeval growth, swarming with every form of vegetable and animal life, now resounding to savage yells, and now to the thunder-clap, extinguishing and crushing down all other sound,—these and a thousand other combinations find each its response in some train of human emotions and affections, which, like the lyre of Timotheus, they by turns excite and soothe.

As the poetical enjoyment of nature springs out of this its endless variety, so, on the other hand, the unity of plan, which even uncultivated minds fail not to recognise amid so much diversity, calls forth the latent germ of the philosophic spirit. When—

'—far from our native country, after a long sea voyage, we tread for the first time the lands of the tropics, we experience an impression of agreeable surprise in recognising, in the cliffs and rocks around, the same forms and substances, similar inclined strata of schistose rocks, the same columnar basalts which we had left in

Europe: this identity, in latitudes so different, reminds us that the solidification of the crust of the earth has been independent of the differences of climate. But these schists and these basalts are covered with vegetable forms of new and strange aspect. Amid the luxuriance of this exotic flora, surrounded by colossal forms of new and unfamiliar grandeur and beauty, we experience (thanks to the marvellous flexibility of our nature) how easily the mind opens to the combination of impressions connected with each other by unperceived links of secret analogy. The imagination recognises in these strange forms nobler developments of those which surrounded our childhood; the colonist loves to give to the plants of his new home names borrowed from his native land; and these strong untaught impressions lead, however vaguely, to the same end as that laborious and extended comparison of facts, by which the philosopher arrives at an intiinate persuasion of one indissoluble chain of affinity binding together all nature.'

One word on this last sentence:—Is it really true, that the uninstructed mind of man, thus turned loose upon nature, *does* spring, as a matter of course, to just conclusions? *Are* his homely analogies always apposite? his extempore classifications correct? his rude inductions legitimate? If so, what need of study and research? How is it, then, that we are to understand what is here intimated, and is there any sense in which it can be received as true? No doubt there is so. There are truths so large, so general, so all pervading, that they make a part of all our experience, mix with our whole intellectual being, and imbue all our judgments, erroneous as well as correct; in this sense, at least, that we never err so far as to place ourselves in conscious opposition to them. Distorted and perverted as such truths may be in their enunciation, by their mixture with extraneous error, we find them still outstanding, redeeming by their presence, and even consecrating, that error, by placing themselves in prominent and ostentatious union with its dogmas. No absurdity would ever obtain a moment's credence, but for the presence in it of some saving particle of one of these great natural truths.

But it is to the instructed only that the contemplation of nature affords its full enjoyment, in the development of her laws, and in the unveiling of those hidden powers which work beneath the surface of things, and which, operating as physical causes, lead back the mind in the chain of causation, through the phœnomena of organised life, to powers of a higher order; which, connecting themselves with the idea of Will, involve the conception of Intelligence, from which we are necessarily led to infer Design, and from Design find ourselves forced on the conclusion of Motive. It is thus, and thus only, that the contemplation of

nature can be said to lead us up, by legitimate induction, to its Author, — to so much of his character, at least, as he has thought fit to reveal to us through his works. But, that it may do so, we must educate our perceptions by practice and habit, till we learn to disregard specialties, whether of objects or laws, and see rather their relations and connexions, their places in a system, their fulfilment of a purpose, their adaptation to an interminable series of intersubservient ends. And this we must endeavour to do without losing sight of the objects themselves, which come at length to stand in intellectual relation to these more spiritualised conceptions, as the notion of substance does to that of quality in some of our older metaphysical theories, — as that substratum of being in which such conceptions inhere, and which serves to bind them together, give them a body, and coerce them from becoming altogether vague and imaginary. And, moreover, we must be careful to raise up no self-created phantasms of our own minds, interposing an impassable barrier to further progress, and cutting off the chain of connexion by a stern *ne plus ultra*. As the distinction drawn in the Aristotelian Philosophy between celestial and terrestrial motions operated for ages to cut off the possibility of arriving at any just views of the Planetary System, so it is perfectly conceivable that, by gratuitous assumptions of another kind, we may wilfully sever ourselves from the possible attainment of knowledge of a far higher order. Against certain notions of this description, which have obtained, or may be obtaining, currency; and others which, without being expressed in words, appear to be extensively, though tacitly, received in science, we consider it worth while to enter our protest: —

The first is, 'that ancient belief, that the forces inherent 'in matter, and those which regulate the moral world, exert 'their action under the government of a primordial necessity, 'and in recurring courses of greater or less period. It is this 'necessity, this occult but permanent connexion, this periodical 'recurrence in the progressive development of forms, of phœ-'nomena and of events, which constitute nature, obedient to 'the first imparted impulse of the Creator. Physical science, 'as its name imports, limits itself to the explanation of the 'phœnomena of the material world by the properties of matter. 'All beyond this belongs, not to the domain of the physics of 'the universe, but to a higher class of ideas. The discovery 'of Laws, and their progressive generalisations, are the objects 'of the experimental sciences.' (Transl. p. 33.)

The frame of nature, moral as well as physical, according to this idea, is a piece of mechanism, which wound up and set

going, has been abandoned to itself, to evolve its changes in variously superposed periods, without choice or option, according to the combinations of an occult wheelwork. If, indeed, there were no such phœnomenon as Will; if we were conscious of being thus blindly hurried along by the uncontrollable swing of the system of which we form a part, at every moment and in every action, such a system might be tenable. Periods of unknown length, superposed according to no discoverable law, lose their character of periodicity to the eye of the observer; and *periods of event*, apart from the notion of the measurement of time, similarly superposed, resolve themselves, so far as observation is concerned, into that imperfect and inadequate idea of causation which considers it as simply a determinate rule of sequence. But *Will*, admitted into any part of such a system, destroys the whole of it. The blind, unintelligent portions of the mechanism must be invested with the power, and be urged by the necessity of conforming themselves to that will, as to the original impulse which set the whole in motion; and how are we then to distinguish between those evolutions which result from a will of which we are conscious, and those which, for aught we know, may be continually resulting from a will continually in action, though concealed from our knowledge and perception?

Another notion, equally destitute, in our eyes, of positive foundation, but much more likely than the former to act prejudicially in limiting the progress even of physical knowledge, is the assumption, as old as Aristotle, that all the phœnomena of nature are referable to *motions* performed in obedience to what we are in the habit of calling *mechanical* laws; that, in other words, there is no such thing as *qualitative change* unaccompanied by change of place — no causation at work other than mechanical push and pull. It is high time, we think, that this assumption should be formally called in question. We are disposed to believe that science has outgrown it. At the same time, we are quite aware into what a licentious career of wild speculation the mind is ready to rush on the removal of such a limitation; what extravagant theories we must expect to see broached, and what confusion of ideas, nay, what positive charlatanries, we must be prepared to encounter, before any clear and definite conception can emerge from the mass of images which crowd upon us on the suggestion of such a change of ground. We may indicate, however, one or two, which may perhaps carry with them some degree of distinctness, viz.: first, The intension, remission, or creation of mechanical force dependent on the presence or absence of agents, such as electricity and heat, of whose *materiality*, in the usual sense of the word, we have no

proof, seeing that inertia (at least, in the case of heat) forms no part of our conception of them; and secondly, the successive *quasi-undulatory* propagation of qualities — powers of affecting either the senses or material bodies by something different from mechanical impulse. It is perfectly true, that on the properties of matter only we must rely for the explanation of physical phœnomena. But we conceive that those properties are only just beginning to become known to us, that we shall have to reject some which have been assumed as unquestionable, and that it is by no means improbable, that science will ere long make us familiar with others, calculated to stretch to the utmost our conception of *material* existence. Entertaining this expectation, we must here, once for all, observe, that the continual use of the word *forces* in the work before us, in such phrases as 'the 'forces of nature' — 'the concurrent action of natural forces' —grates with something approaching to a painful harshness on our ears. We should be inclined to substitute for it, wherever it occurs, the expression 'physical powers,' a sense which the German Kräfte might bear, we think, without violence.

A third dogma, which has of late been placed in prominence, much, as we conceive, to the detriment of sound philosophy, is that of the so called, or rather miscalled, *positive philosophy* — an extravagant and morphological transformation of that rational empiricism, which professes to take experience for its basis; resulting from insisting on the prerogatives of experience in reference to external phœnomena, and ignoring them in relation to the movements and tendencies of our intellectual nature: — a philosophy which, if it do not repudiate altogether the idea of causation, goes far, at least, to put it out of view, and with it, everything which can be called *explanation* of natural phœnomena, by the undue predominance assigned to the idea of Law: — which rejects as not merely difficult, not even simply hopeless, but as utterly absurd, unphilosophical, and derogatory, all attempt to render any rational account of those abstract equation-like propositions, in which it delights to embody the results of experience, other than their inclusion in some more general proposition of the same kind. Entirely persuaded that, in physics, at least, the inquiry into causes is philosophy; that nothing else is so; and that the chain of causation upwards is broken by no solution of continuity, constituting a gulph absolutely impassable to human faculties, if duly prepared by familiarity with the previous links; we are far from regarding the *whole* office of experimental philosophy as satisfactorily expressed, by declaring it to consist in the discovery and generalisation of laws. There are two ways of expressing every law

of nature,—one which does, the other which does not, bear reference to the cause, which lies at the root of the phœnomenon. It is something distinct from, and more than a mere generalisation of law, which refers the planetary motions to *Force* as a Cause of motion. No acuteness would ever have sufficed to conclude the laws of perturbation from those of elliptic motion, and to detect a new planet by the mere knowledge of these latter laws, had this word, the key of the whole riddle, remained unpronounced. The craving of the philosophic mind is for *explanation*, i. e. for the breaking up of complex phœnomena into *familiar* sequences, or equally familiar transitional changes, or cotemporary manifestations; which, under the names of cause and effect, we are content to receive (at least temporarily) as ultimate facts, and which nothing but perfect familiarity divests of that marvellous character which they really possess,—*which are only not looked upon as miraculous because they are usual.* When we work our way up to facts of this character, physical inquiry ends, and speculation begins. Very few such ultimate facts have hitherto been arrived at in physics; and it is to the increase of their number, by future inquiry, that we must look for any prospect of erasing any one of them from the list, *i. e.* of explaining it. No doubt explanation must ever be imperfect, if quantitative laws be wanting as a feature. But the first, at least the most necessary office of experimental philosophy, is, the detection of the *influential thing*, the *ultimate fact*, or facts, on which explanation hinges—its subsequent, and, in that sense, subordinate, though still most useful and important one; to discover the formal and quantitative laws of that influence. If, indeed, it be said, that the proposition announcing these ultimate facts is *a law*, in the sense of the word intended, we protest against the abuse of language, which confounds, under one form of expression, the detection of the law itself, and the subject matter of the law—the *quod loquimur*, with the *de quo*.

With the richness of idea and command of resource which natural knowledge confers, civilisation goes hand in hand. The remarks of M. de Humboldt on this part of his subject are so pointed and impressive, that we cannot refuse ourselves the pleasure of quoting them:—

'The clearer our insight into the connexion of phœnomena, the more easily we shall emancipate ourselves from the error of those who do not perceive that, for the intellectual cultivation and for the prosperity of nations, all branches of natural knowledge are alike important, whether the measuring and describing portion, or the examination of chemical constituents, or the investigation of the physical

forces by which all matter is pervaded. . . . An equal appreciation of all parts of natural knowledge is an essential requirement of the present epoch, in which the material wealth and the increasing prosperity of nations are in great measure based on the more enlightened employment of natural products and forces. . . . The most superficial glance at the present condition of European states shows that those which linger in the race cannot hope to escape the partial diminution, and, perhaps, the final annihilation of their resources. . . . The danger . . . must be averted by the earnest cultivation of natural knowledge. . . . Knowledge and thought are at once the delight and the prerogative of man; but they are also a part of the wealth of nations, and often afford to them an abundant indemnification for the more sparing bestowal of natural riches.'

To all this, of course, we heartily subscribe; and we only wish that the limit M. de Humboldt has prescribed to himself would have permitted him to extend the scope of his remarks, clothed, as they are, in such animated language, to embrace a far wider range of application. The frame of Nature is not bounded by that narrow limit which is commonly understood by the term Physics. Life, thought, and moral and social relation, are all equally *natural* — equally elements of the great scheme of the Kosmos with matter and magnetism. The only imaginable reason why the sciences growing out of these ideas are not regarded and handled, or have not hitherto effectually been so, as branches of natural science and inductive inquiry, is the great difficulty of arriving at true statements of facts in some, owing to the conflict of partial interests, and the great danger and consequent heavy responsibility attending experiments in others. These obstacles can only be removed by the general enlightenment of mankind, enabling them to perceive that their true interests require truth in the statement of facts; deliberate caution in undertaking, and patience — long, calm, enduring patience — and hearty co-operation, in watching the working out of social and legislative experiments.

A great and wondrous attempt is making in civilized Europe at the present time: neither more nor less than an attempt to stave off, *ad infinitum*, the tremendous visitation of war; and, by removing or alleviating the positive checks to the growth of population, to diminish the stringency of the preventive ones, and to subsist continually increasing masses on a continually increasing scale of comfort. May it be successful! But the only conditions on which it can be so are, that nature be laid yearly more and more under contribution to human wants; and that the masses themselves understand and go along with the exertions making in their favour in a spirit of amicable and rational conformity. To no other quarter than to the progress

of science can we look for the least glimpse of a fulfilment of the first of these conditions. Neither the activity of hope, nor the energy of despair, acting by stationary means on unvarying elements, can coerce them into a geometrically increasing productiveness. Science must wave unceasingly her magic wand, and point unceasingly her divining rod. The task now laid on her, however, is not of her own seeking. She declines altogether so dread a responsibility, while yet declaring her readiness to aid, to the utmost of her powers; claiming only the privilege, essential to their available exertion, of free, undisturbed, and dispassionate thought, and calling upon every class to do its duty; the higher in aiding her applications, the lower in conforming to her rules.

In that part of his work which treats of the limits and method of exposition of the physical description of the universe, M. de Humboldt takes considerable pains to represent the 'Science of the Kosmos' as a separate and independent department of knowledge, distinct in scope and kind from a mere encyclopædic aggregation of physical sciences. We concern ourselves little whether in this he have succeeded in making out a useful and available distinction; admitting, as he does, that in his mode of conceiving and handling it, it is, in effect, the aggregate, by simple juxtaposition, of two separate and very unequal portions, similar in character so far as the *less* can be similar to the *more* complex. He regards it, in short, as physical geography enlarged by such a description of the heavens and their contents as shall correspond in plan and in conception (so far as our knowledge extends) to that description of the earth and its denizens which is intended by the former designation. In so far, then, as physical geography is entitled to be termed a separate and independent science, Kosmography, or the science of the Kosmos, is so also, and a more general one, including the other. A Chinese map of the globe *is* a map of the globe, and not a mere map of China, though the Flowery Land figure therein in rich detail of city, stream, and province; and though Europe, Asia, Africa, and America exist, for the most part, in mere outline, and occupying an extent of surface altogether disproportioned to their true extent and importance. This is not the fault of the Celestial Arrowsmith. Had he known more of the globe, he would have given his countrymen a better map.

Our simile, however, is faulty in one respect. What we know of the contents of space exterior to our globe we at least know truly, — at all events, we can separate our knowledge from our ignorance; and it happens, fortunately, that what escapes our view is precisely that which, if seen, would merely

serve to puzzle and perplex us; while the great and obvious features which strike us are precisely those which we are best able to reduce to general laws, and to view in systematic connexion, and which reveal to us, in its grandest form, the Unity of the Kosmos. The all-pervading power of gravitation, that mysterious reality by which every material being in the universe is placed in *instant* and influential relation with every other, springs forward in a state of disengagement and prominence on the contemplation of the celestial movements which it, perhaps, might never have assumed had not the opportunity been afforded us of so contemplating it, apart from the distracting influence of corpuscular forces which, in innumerable instances, mask and overlie it in its exhibition on the surface of our planet. And again: the phœnomenon of light, its uniform properties and equal velocity from whatever quarter of space it reaches us, and the certainty those properties afford of the existence of a perfectly uniform mechanism, coextensive with space itself, continually occupied in the discharge of the most important of all offices, that of conveying at once information and vital stimulus from every region of space to every other — facts of this kind, were there no other, would suffice to force upon our minds the clear perception of a unity of plan and of action in the constitution of nature. 'A connexion is maintained, by means of 'light and radiant heat, both with the sun of our own system, 'and all those remoter suns which glitter in the firmament. 'The very different measure of these effects must not prevent 'the physical philosopher, engaged in tracing a general picture 'of nature, from noticing the connexion and coextensive do-'minion of similar forces.' (*Kosmos*, p. 146., Transl.)

We therefore entirely agree with our author in the propriety of that arrangement of his work which gives the precedence of treatment to the celestial over the 'telluric' view of nature; and prefaces the description of our own globe by that of the sidereal and planetary system. And whether such description be properly regarded as the exposition of a body of science, or (as we should rather feel disposed to look upon it) a sort of epos, a noble oratorio, or a grand *spectacle*, we are delighted to receive it at his hands, and to throw ourselves into that frame of mind for its reception which shall be best calculated to heighten the impression, and do justice to the exponent.

Taking our stand, therefore, on the extreme verge of the visible creation, let us for an instant look about us, ere we descend with him, like the angelic messenger in Milton, through stars, nebulæ, and systems, to this planetary sphere and its central sun. Where are we? *Is* there such an extreme

verge? This question, which lies at the very threshold of an exposition of the Kosmos, *per descensum*, is one which has so little to recommend it as a matter of discussion that we certainly should not mention it here, had it not got involved in an astronomical speculation of a very singular nature. The assumption that the extent of the starry firmament is literally infinite has been made, by one of the greatest of astronomers, the late Dr. Olbers, the basis of a conclusion that the celestial spaces are in some slight degree deficient in *transparency;* so that all beyond a certain distance is, and must for ever remain, unseen; the geometrical progression of the extinction of light far outrunning the effect of any conceivable increase in the power of our telescopes. Were it not so, it is argued, every part of the celestial concave ought to shine with the brightness of the solar disc; since no visual ray could be so directed as not, in some point or other of its infinite length, to encounter such a disc. With this peculiar form of the argument we have little concern. It appears to us, indeed, with all deference to so high an authority, invalid; since nothing is easier than to imagine modes of systematic arrangement of the stars in space (entirely in consonance with what we see around us of the principle of subordinate grouping actually followed out) which shall strike away the only foundation on which it can be made to rest, while yet fully vindicating the absolute infinity of their number. It is the conclusion only which it appears to us important to notice, as having recently been attempted to be established on grounds of direct statistical enumeration of stars of different orders of brightness, by the illustrious astronomer of Pulkova, in a remarkable work (Etudes d'Astronomie Stellaire), and even some rude approximation made to the rate of extinction. It would lead us far beyond our limits to attempt even to give a general idea of his reasonings, but one remark on the whole subject we cannot forbear. Light, it is true, is easily disposed of. Once absorbed, it is extinct for ever, and will trouble us no more. But with radiant heat the case is otherwise. This, though absorbed, remains still effective in heating the absorbing medium, which must either increase in temperature, the process continuing, *ad infinitum*, or, in its turn becoming radiant, give out from every point at every instant as much heat as it receives.

Of the supposed luminiferous æther itself, as one of the material or quasi-material contents of space, M. de Humboldt says nothing. He waives, designedly, at least in the present volume, any allusion to that, and all other theoretical conceptions. The view of creation which he takes, and which we must take with

him, is so purely and entirely objective, so closely confined to what Mr. Mill would call the *collocations* of the Kosmos, that even the Newtonian law of gravitation, with its noble train of mathematical consequences, is excluded from all direct and special notice. We must not, therefore, wonder, but accept it as part of the determinate plan of the work, that light itself is spoken of only incidentally, as affording a measure of sidereal distance by its velocity, and as conveying to our eyes the images of remote sidereal objects, not as they now exist, but as they existed years or ages ago; or that no account is given of the Gaussian generalisations of the theory of terrestrial magnetism, —a subject, of which M. de Humboldt is so pre-eminently cognisant, that it must have required the greatest self-control, and the most entire satisfaction with his pre-conceived views of the limits of his subject, to have avoided dilating on it.

The most remote bodies which the telescopes disclose to us are, probably, the nebulæ. These, as their name imports, are dim and misty-looking objects, very few of which are visible to the unassisted sight. Powerful telescopes resolve most of them into stars, and more in proportion to the force of the instrument; while, at the same time, every increase of telescopic power brings fresh and unresolved nebulæ into view. A natural generalisation would lead us to conclude, that all such objects are nothing but groups of stars, forming systems, differing in size, remoteness, and mode of aggregation. This conclusion would, indeed, be almost irresistible but for a few rare examples, where a single star of considerable brightness appears surrounded with a delicate and extensive atmosphere, offering no indication of its consisting of stars. Such objects have given rise to the conception of a self-luminous nebulous matter, of a vaporous or gaseous nature, of which these photospheres, and, perhaps, some entire nebulæ, may consist, and to the further conception of a gradual subsidence or condensation of such matter into stars and systems. It cannot be denied, however, that the weight of induction appears to be accumulating in the opposite direction, and that such 'nebulous stars' *may*, after all, be only extreme cases of central condensation, such as two or three 'nebulæ,' usually so called, offer a near approach to. Apart, then, from these singular bodies, and leaving open the questions they go to raise, and apart from the consideration of such peculiar cases as planetary and annular nebulæ, the great majority of nebulæ may be described as globular or spheroidal aggregates of stars arranged about a centre, the interior strata more closely than the exterior, according to very various laws of progressive density, but the strata of equal density being more nearly

spherical according to their proximity to the centre. Many of these groups contain hundreds, nay, thousands, of stars.

Besides these, there exist nebulæ of a totally different description; of vastly greater apparent dimension, and of very irregular and capricious forms, of which the well-known nebula in Orion is an example. They form, evidently, a class apart from the others, not only in aspect, but also as regards their situation in the heavens; for whereas the former congregate together chiefly in a great nebulous district remote from the Milky Way, or are otherwise scattered over the whole heavens, (though by no means so as to form what M. de Humboldt terms a 'nebulous milky way,' or zone of nebulæ surrounding the sphere,) these only occur in the immediate vicinity of the galaxy, and may fairly be considered, if not as integrant portions, at least as outliers of it. Their forms, therefore, may be considered as in some degree indicative of the true form of that starry stratum, could we contemplate it from a distance, so far, at least, that we may reasonably suppose it quite as irregular and complex as we observe these, its appendages, actually to be.

M. de Humboldt leans, as might be expected from one especially conversant with organic forms, to that view which represents the nebulæ as sidereal systems, in process of gradual formation by the mutual attraction of their parts, and by the absorption of the strictly nebulous element into stellar bodies. 'The process of condensation,' he says, 'which was part of the 'doctrine of Anaximenes, and of the whole Ionic school, appears 'to be here going on before our eyes. The subject of conjoint 'investigation and conjecture has a peculiar charm for the 'imagination. Throughout the range of animated existence, 'and of moving forces in the physical universe, there is an 'especial fascination in the recognition of that which is be-'coming, or about to be, even greater than in that which is, 'though the former be indeed no more than a new condition 'of matter already existing; for of the act of creation itself, 'the original calling forth of existence out of non-existence, we 'have no experience, nor can we form any conception of it.'

That the whole firmament of *stars* visible to us, even with the help of telescopes, belongs to that vast sidereal stratum which we call the Galaxy, seems hardly to admit of doubt. The actual form of this stratum, further than that it is not improperly characterised as such, can hardly be said to be known with any approach to certainty; but that its extent in a direct line outwards is enormously greater in some directions than in others, and that in one portion of its extent it is, as it were, cleft, and contorted, in others lengthened into processes stretch-

ing far into space, seems to rank among the positive conclusions of astronomy. In certain directions its extent would seem to be unfathomable to our best telescopes; in others, there is reason to believe we see through and beyond it, even in its own plane.

Of the distance of the stars of which this vast stratum consists, at least of some of the nearest of them, we are beginning, at length, to possess some certain knowledge. The bright star *a* Centauri has a measured parallax (as the observations of Henderson and Maclear teach us) of nearly a whole second (0″·9128), which places it at a distance from us equal to 226,000 radii of the earth's orbit. That of 61 Cygni has been ascertained by Bessel to be no less than 592,200 such radii, while the observations of Struve place *a* Lyræ at 789,600 of similar units from our system. Such is the scale of the system to which we belong, such the magnitudes we are led to regard as small, in comparison with its actual extent! The number of stars whose distance is imperfectly known to us at present is about thirty-five, seven of which may be considered as determined, with some approach to certainty, by the recent researches of Mr. Peters.

Among the countless swarm of what are commonly called fixed stars, there is not one, probably, which really merits the name. In by far the great majority, a minute, but regularly progressive, change of place is observed to take place; and, from a careful examination of these movements, as observed in stars visible in Europe, it has been concluded, that a portion at least of them is only apparent, and arises from a real motion of our own sun, carrying with it the whole planetary system, towards a point in the constellation Hercules, in R. A. 259° 35′ decl. 34° 34′ north. This extraordinary conclusion, resting as it does on the independent and remarkably agreeing calculations of five different and eminent astronomers, from data afforded by northern stars, has, within the last few months, received a striking confirmation by the researches of Mr. Galloway, who has arrived at the very same conclusion, from calculations founded on the proper motions of stars in the southern hemisphere, not included among those used by his predecessors. In this path the sun moves with the prodigious velocity of 400,000 miles, or nearly its own semi-diameter, *per diem*.

Independent of the movements of translation not accounted for by this cause, several of the stars have a rotary motion, forming pairs or binary systems, called double stars, revolving about each other in regular elliptic orbits, governed by the Newtonian law of gravitation. This sort of connexion, suggested as theoretically probable by Mitchell, and demonstrated

as a matter of observation by Herschel, has now been distinctly traced in fifty or sixty instances (M. de Humboldt, anticipating what will doubtless one day prove to be a fact, says 2800), among which occur examples of periodic revolutions of 200, 182, 117, 61, 44, and even 17 years, and of orbits, in some cases so excentric as to be quite cometary, in others nearly circular. Some again are concluded, with much probability, to revolve on their axes, from the observation of regular periodic changes in their lustre; while others vary in no regular and certain periods, undergoing great and abrupt changes, for which no probable cause has yet been assigned. In one remarkable instance a change of colour would appear to have taken place. Sirius, which is now one of the whitest of the stars, is characterised by Ptolemy as red, or at least ruddy. Ὁ δὲ Σείριος, ὑπόκιρρος, is his expression, speaking pointedly of its colour, and not of its scintillations.

Not the least surprising, is the actual and positive knowledge we have obtained of the *weight* or quantity of matter contained in at least one of the binary stars, 61 Cygni; from whose orbital motion, compared with its distance, Bessel has concluded that the conjoint mass of its two individuals is 'neither much more 'nor much less than half the mass of our sun.' It appears as a star of the sixth magnitude. From the photometric experiments of Wollaston on α Lyræ, compared with what we know of its distance, its actual emission of light may be gathered to be not less than $5\frac{1}{2}$ times that of the sun. Sirius, which is nine times as bright as α Lyræ, and whose parallax is insensible, cannot, therefore, be estimated at less than 100 suns.

Non-luminous stars have been conjectured to exist, and Bessel even considered that some irregularities, supposed to subsist in the proper motions of Procyon and Sirius, could no other way be accounted for than by supposing them to be revolving about invisible central bodies. The illustrious astronomer of Pulkova, in the work we have already had occasion to cite, has, however, by destroying the evidence of irregularity by a careful revision of all the recorded observations, rendered it unnecessary to resort to such an hypothesis.

Neither have attempts been wanting to deduce from the proper motions of the stars, the situation in space of the 'Central Sun,' about which the whole firmament revolves. Lambert placed it in the nebula of Orion; Maedler, very recently, in the Pleiades, on grounds which, however, appear to us anything but conclusive.

The vast interval which separates our system from its nearest neighbours among the fixed stars, is a blank which even the

imaginations of astronomers have been unable to people with denizens of any definite character, other than a few lost comets slowly groping out their benighted way to other systems, or torpidly lingering *in aphelio*, expecting their recall to the source of light and warmth. In the utter insulation of this huge intervening gulph, it is impossible not to perceive a guarantee against extraneous perturbation and foreign interference, or to avoid tracing an extension of the very same principle of subordinate grouping which secures the satellites of our planets from too violent a perturbative action on the part of the central body. It thus assumes the character and importance of a cosmical law; and, while it affords another and most striking indication of the unity of plan which pervades the universe, may lead us to believe that, if other systems yet exist in the immensity of space, they may be separated from our own by intervals so immense as to appear only as dim and nebulous specks, or utterly, and for ever, to elude our sight.

Descending, now, with our guide through this *vacuum inane* to our own system, we shall for a moment depart from his arrangement to strike at once upon its central body—our own sun. This, indeed, can hardly be called a departure, since, by an extraordinary omission, we find no special notice taken by M. de Humboldt of this magnificent globe. Yet, surely, there is matter of sufficient interest in what is known and seen of its physical constitution and important peculiarities, to have justified, indeed to have required, their not being passed *sub silentio* in a physical description of the universe. If there be much, as yet mysterious, in its inexhaustible emission of light and heat, there is also much in the mechanism by which that emission is produced which is matter of ocular inspection. We know, for instance, that the sun is not simply an incandescent mass; that the luminous process, whatever its nature, is superficial only, being confined to two strata of phosphorescent clouds, floating in an atmosphere of considerable but imperfect transparency, extending to a vast distance beyond them: that these clouds are often driven asunder by tumultuary movements of astonishing energy and extent, disclosing to our eyes the dark surface below; that the region in which these movements take place is confined to an equatorial belt of about sixty degrees in breadth, being, however, comparatively much less frequent in the immediate vicinity of the equator itself. We know, moreover, that the time of its rotation ($25\frac{1}{2}$ days) stands in decided and pointed dissonance with the Keplerian law of the planetary revolutions, and that therefore the sun has *most certainly not* been formed by the simple subsidence of regularly rotating planetary matter gra-

dually contracting in dimension by cooling; a fact which the advocates of the nebulous hypothesis must, therefore, render some other account of.

The primary planets known to us at the present moment are sixteen in number, including no less than five which have been added to the list since the publication of the Kosmos in 1845. The discovery of one of these, Neptune, by the mere consideration of the recorded perturbations of the remotest planet previously known, by the theory of gravitation, as delivered by Newton, and matured by the French geometers, will ever be regarded as the most glorious intellectual triumph of the present age. If any thing could enhance its claim to be so considered, it is the assurance given us of the exceedingly firm grasp by which theory has seized on this most complicated subject; by the fact of the discovery having been made almost simultaneously by two geometers of different nations, pursuing different courses of investigation, each in entire ignorance of the other's proceedings, and arriving at what may fairly be termed the same identical place of the yet unseen planet. It is not a little remarkable that astronomy, the oldest, and, as it might be considered, the maturest among the sciences, is perhaps at this moment the most rapidly progressive of any, such is the novelty as well as the magnitude of the facts which every year brings forth.

M. de Humboldt in this division of his subject, presents us with a rapid, but an extremely striking and well-digested view of the 'collocations' of our system; that is to say, of the actual arrangement and distribution of its masses in respect of their magnitudes, densities, and distances from the sun, their times of rotation on their axes, and the extent of their provision with satellites. We have never met with a better *exposé* of these particulars, grouped as they are under a variety of aspects, with the object of bringing into view the general relations, if any, which exist between them.

'It has been proposed to consider the telescopic planets,' now eight in number, between Mars and Jupiter, 'with their more excentric, intersecting, and greatly-inclined orbits, as forming a middle zone, or group, in our planetary system; and if we follow out this view, we shall find that the comparison of the inner group of planets, comprising Mercury, Venus, the Earth, and Mars, with the outer group, consisting of Jupiter, Saturn, Uranus,' (and Neptune), 'presents several striking contrasts. The planets of the inner group, which are nearer the sun, are of more moderate size, are denser, rotate round their respective axes more slowly, in nearly equal periods, differing little from twenty-four hours, are less compressed at the poles, and, with one

exception, without satellites. The external planets . . . . are of much greater magnitude, five times less dense, more than twice as rapid in their rotation round their axes, more compressed at the poles, and richer in moons in the proportion of seventeen' (eighteen) 'to one.'

So soon as we descend to particulars, however, we find these general relations broken in upon by continual exceptions. The history of the discovery of Neptune has afforded a signal instance how little reliance could be placed on a *law of collocation*, which had begun to be considered as a fundamental relation pervading the whole system. Still, as such laws, partially carried out, they possess a peculiar interest, especially when we consider the exactness of numerical relation which holds good in several instances, and which leads irresistibly to speculate upon causes, as is the case with all close numerical coincidences, which nothing can persuade us to believe purely accidental when they take place in matters of fact. *Why*, we are tempted to ask, do the diurnal rotations of Mercury, the Earth, and Mars, agree to a minute? *Why* are the densities of the Sun, Jupiter, Uranus, (and ? Neptune) exactly alike, and just one fourth of the Earth's? Again, among the satellites, *why* are the periodic times of Saturn's third and fourth satellites respectively, *precisely* double those of the first and second? And *why* are the rotations of the satellites, generally, on their axes performed in *precisely* the same times as their revolutions about their respective primaries? Of this last-mentioned coincidence, indeed, a mechanical explanation is given (Kosmos, p. 155. Trans.) which we are aware rests on high authority. It pre-supposes, however (which our author does not appear to have recollected), an original, *very near* adjustment to exact coincidence; and even with this admission we remain by no means satisfied of its validity. It appears to us that the very smallest deviation from *perfect* coincidence, originally subsisting, would destroy all tendency to that accumulation of matter on one diameter of the satellite, and consequent permanent elongation of its figure, which the further steps of the so-called explanation require.

By far the most wonderful and mysterious bodies of our system are the comets. Their number is immense, their variety of aspect infinite, their magnitude astounding. Apart from the magnificence of their appearance, and the interest attaching to their excentric orbits, and utter contempt of the ordinary planetary conventions in their excursions into space, they have become to us instruments of physical inquiry; and the study of their motions has disclosed to us features in the constitution of our system of which we should otherwise have had no idea, and

afforded opportunities, which, but for them, had been altogether wanting of completing our knowledge of the masses of the planets themselves. Their almost spiritual tenuity enables them to feel as it were, and to manifest by a sensible retardation the resistance of a medium pervading the planetary spaces, while the direction of their tails always turned from the sun, and the enormous velocity with which these singular appendages have appeared on some occasions to be projected in the opposite direction to the solar gravity, has afforded more than a presumption of the existence of repulsive as well as attractive forces in our system. It would be endless to recount the singularities presented by these bodies. Some have had two tails, one (1744) six, and some none at all, though otherwise large and conspicuous. Many have been seen in bright sunshine and at noon-day, as was the case with the recent magnificent one of 1843. The tails of some have equalled, and even surpassed in length, the radius of the earth's orbit; and through those of the comets of 1819 and 1823 the earth itself is supposed to have passed. The famous comet of Lexell passed twice (1767 and 1779) among the satellites of Jupiter, and approached the earth in 1770 within six times the distance of the moon. Several of them return in known periods: the celebrated comet of Halley in 76·871 years; that of Encke in 3·316; that of Biela in 6·599, and that of Faye in 7·29 years. The climax to the bizarreries of these singular bodies was afforded in 1846 by one of these last-mentioned comets (that of Biela), which was actually seen to separate itself into two; which, after thus parting connexion, continued amicably journeying along side by side without further mutual disturbance.

The fall of masses of stone, of iron, and of ashes and other substances from the heavens, is a fact now so thoroughly well attested, that every doubt as to its reality has long since vanished. The latter phœnomenon may not unreasonably be attributed to volcanic eruptions, or to matter swept from the surface of the earth by tempests and whirlwinds, carried to a vast height, and deposited at great distances from its origin; and such, indeed, appears to have been the case in many well authenticated instances. We have before us a portion of a sheet of 200 square feet, of a substance exactly similar to cotton felt, and of which clothing might be made, which fell at Carolath, in Silesia, in 1839. On microscopic examination it is found to consist of delicate matted and bleached confervæ containing infusoria; and was therefore, doubtless, raised from its natural site, the dried bed of some lake or marsh, and wafted to the place of its fall by a storm.

But no such explanation will apply to the astounding phœnomenon of the sudden fall of blocks of stone or iron of several pounds, nay tons in weight.

'A presumptuous scepticism,' says M. de Humboldt, 'which rejects facts without examination of their truth, is, in some respects, even more injurious than an unquestioning credulity. It is the tendency of both to impede accurate investigation. Although for upwards of 2000 years the annals of different nations had told of falls of stones, which, in many instances, had been placed beyond doubt by the testimony of irreproachable witnesses; although the Bætylia formed an important part of the meteor worship of the ancients, and the companions of Cortes saw, at Cholula, the aerolite which had fallen on the neighbouring pyramid; although caliphs and Mongolian princes had had swords forged of fresh-fallen meteoric iron; and even although human beings had been killed by the falling stones (viz., a friar at Crema on the 4th of September, 1511, a monk at Milan, 1650, and two Swedish sailors on board a ship in 1674); yet, until the time of Chladni, who had already earned for himself imperishable renown in physics by the discovery of his figure-representations of sound, this great cosmical phœnomenon remained almost unheeded, and its intimate connexion with the planetary system remained unknown.'

We can pardon some degree of scepticism, on a subject apparently so marvellous, before the assemblage of recorded facts had brought a mass of independent and agreeing evidence to bear upon the general mind, nauseated as it had become by tales of monkish miracle and travellers' wonders. Chladni wrote in 1794, and his work had effectually shaken this scepticism, and excited general attention, when, on the 26th of April, 1803, a shower of stones, thousands in number, and several of them weighing many pounds, was hurled over a district of between twenty and thirty square miles in extent, by the explosion of a globe of fire in mid-day and in a clear sky, vertically over the town of l'Aigle, in Normandy. This was precisely the opportunity to inquire minutely into all the circumstances of the event, and to place them on official record. Accordingly, at the instance of the French Academy of Sciences, the government commissioned M. Biot to proceed to the spot, examine witnesses, and collect every particular. His report on this event, which forms part of the memoirs of the Institute for 1806, leaves no room for doubt as to its reality. Trees were broken, houses struck, the ground ploughed up, the actual stones picked up or dug out in vast abundance. Many persons had narrow escapes, and one was slightly wounded. A list published by Chladni (Ann. du Bureau des Longitudes, 1825,) enumerates upwards of 200 instances of similar occurrences,

collected from the annals of all nations, China included; among which we observe no less than sixteen recorded in the British Isles subsequent to 1620, one of which (May 18. 1680) took place in London. Subsequent research has added largely to this list, and new occurrences of the kind are continually happening. Many of the masses which have so fallen have been of great magnitude. To say nothing of the enormous weight of some of the blocks of iron supposed to be of meteoric origin; the stone which fell at Ægospotamos was as large as two millstones; and that which fell at Narni, A. D. 921, formed a rock projecting four feet above the surface of the river. A mass of this magnitude, so distinct in its nature from the materials of the surrounding rocks, and in a locality so very definite, might surely yet be found by persevering search. Facts of this kind preclude all idea of their being formed in the air from floating vapours, while their difference from all known volcanic products or minerals excludes their reference to a terrestrial origin. Volcanoes in the moon were for a time resorted to, and M. de Humboldt (note 69.) is at some pains to prove this opinion untenable. We believe it to be now entertained by no one. Their planetary nature is the only remaining account which can be given of their origin; and this opinion he of course adopts, classing them with the other admitted members of our system. The phœnomena of their explosion, and the violent, though transient and merely superficial heat which they undergo at the moment of their fall, may perhaps be considered as militating against such an origin. But we perceive nothing in these circumstances incompatible with the necessary consequences of such a rencontre. Arriving with planetary velocity at the confines of our atmosphere, where the air is many thousand, perhaps million times rarer than at the surface of the earth, such a body would carry before it the air on which it immediately impinged, compressing it to an enormous *relative* extent against its own surface, before the *absolute* compression could reach such a point as to determine its lateral escape. Now, it has been shown by Poisson (Ann. de Chim. xxiii. 341.) that the latent heat of a given weight of air is greater, the lower the pressure under which it exists. A given quantity (by weight) of air, therefore, at those elevations contains more latent heat than the same quantity at the earth's surface. When condensed, therefore, it will give out *more* heat than would be elicited by the same extent of *relative* condensation from air of ordinary density, which we know to be capable of producing ignition, even under very moderate degrees of sudden compression. A source of sudden and transient heat of almost any conceivable intensity,

is thus provided in immediate contact with the surface of the stone, which it would fuse and partly vaporise, while the sudden and violent expansion of the parts immediately beneath the fused film must necessarily cause decrepitation and disruption of fragments. In short, there is no part of the phœnomenon which this explanation does not reach. Mere friction against the atmosphere, as suggested by Poisson, seems quite insufficient to produce incandescence.

That a resemblance should be conceived to exist between those globes of fire which throw down stones and those which only gleam and are extinct, or which terminate with a harmless, though often very terrific explosion, is not to be wondered at. Yet the analogy founded on mere optical resemblance would hardly suffice to prove a community of nature or origin. Accordingly, little or no attempt was made to connect these formidable visitors with the innocuous spectacle afforded by shooting stars or train-accompanied meteors, till 1833, when a brilliant display of the November meteors, on the 12th and 13th of that month, repeated on the same days of the following year, brought to recollection a similar display witnessed by M. de Humboldt in 1799, in America. On comparison of dates, it was perceived, with astonishment, that they precisely coincided. The extraordinary fact has since been established by observation, and by the assemblage of ancient and modern records, that meteoric showers occur *periodically* on certain given days of the year, though not of every year, and especially on the 12th—14th November, and the 9th—11th of August; the latter epoch being the most uniform in respect of the intensity of the phœnomenon. Another fact, not less striking, has emerged in respect of the directions affected by the meteors in their flight. They diverge, apparently, from fixed points in the heavens, whose longitudes are 90° in advance of the actual places of the earth in the ecliptic at the epochs in question. Such apparent divergence, by the rules of perspective, is the criterion of a real parallelism; and we are thus carried onwards to the inevitable conclusion of a cosmical origin and common direction of motion, in groups or flights of these bodies, which the earth encounters in its annual path, and which are presumed to form rings or planes more or less interrupted about the sun, revolving according to planetary laws. We agree with M. de Humboldt in considering the general conclusion as perfectly well established, and as justifying his admission of them into the rights of recognised membership of the planetary system.

The zodiacal light is another of those luminous phœnomena to which a cosmical origin has always been ascribed:—

'The earliest distinct description' of it 'is contained in Childrey's Britannia Baconica (1661). Its first observation may have been two or three years earlier. Dominic Cassini has, however, incontestably the merit of having been the first (in 1683) to investigate its relations in space. . . . It may be conjectured with much probability that the remarkable light, rising pyramidically from the earth, which, in 1509, was seen in the eastern part of the sky for forty nights in succession from the high table land of Mexico (and which I find mentioned in an ancient Aztec manuscript in the Codex Tellerio-Remensis, in the Royal Library at Paris,) was the zodiacal light.' (Transl. p. 189.)

This light, as M. de Humboldt justly reasons, cannot be the solar atmosphere in the ordinary sense of the words. But we cannot so readily admit the conclusion he draws, that it is an extremely oblate *ring* of lucid vapours revolving in space between the orbits of Venus and Mars. An extent much beyond the earth's orbit, at all events, seems incompatible with its pointed or pyramidal form and termination at a certain apparent distance from the sun, instead of being continued all around the heavens. Nor can we perceive any good reason for ascribing to it an annular form, wholly exterior to the orbit of Venus. The passage which he cites from Cassini (note 96.) in support of this opinion appears to us by no means susceptible of this interpretation; nor are we aware of any observations which necessitate such a conclusion, contrary as it is to the opinion generally received on the subject.

Descend we now to our own globe, 'from the region of celes-'tial forms to the more restricted sphere of terrestrial forces; 'from the children of Uranus to those of Gea;' from the contemplation of matter obedient to comparatively few and simple impulses and laws, offering no indications of qualitative diversity —to matter under the influence of molecular forces of excessive complication, and laws very imperfectly understood, exhibiting fundamental diversities of quality, affording endless scope to agencies which scarcely appear to resolve themselves into the simple conception of mechanical effort, and whose active principles, electricity and heat, present themselves to us under aspects now reminding us of the ordinary forms of matter by their quantitative relations to tangible bodies, and now eluding our grasp by a subtilty which seems to transcend our notions of corporeal existence. Here, too, we become conversant with organic life in all its infinite diversities and stages of manifestation, and in all its adaptations to external conditions; as a something superposed upon and subsequent to matter. Here, too, we encounter voluntary motion as something again superposed upon mere organic development; and here, too, the life of

instinct and the life of thought, rising higher and higher by successive but gradual steps, till at length one vast bound lands us in HUMANITY, with all its hopes and visions of something yet beyond. Such is the field we have now to enter upon —

'The wide, th' unbounded prospect lies before us;'

but its richness, no less than its extent, forbids our lingering on its outskirts in idle contemplation of its glories.

The path followed by M. de Humboldt in threading the labyrinth of this vast mass of knowledge, is, perhaps, on the whole, the best which could have been adopted to preserve a continuity of course, and to bring the phœnomena to bear on each other with due regard to causal sequence.

He first, under the general head of 'Terrestrial Phœnomena,' gives us an outline of those broad features which have relation to the mass of the earth as a whole; and in which the acting forces and powers are considered in their mean or average intensity, or as acting on the largest scale, unaffected by local causes. The features which admit of being so presented, are those which refer to the dimensions and figure of the earth, its mean density and temperature; and the evidences, such as we possess them, of an increase in both these respects, in descending from its surface to its centre. Terrestrial magnetism too, and the disturbances, whatever be their origin, which the magnetic power of the earth undergoes upon the great scale, during 'magnetic storms' and auroral displays, as well as those secular variations which modify all its local manifestations, according to laws yet unknown, but whose influence extends to the whole globe, find a natural place in this division of the entire subject.

Under the general notion of the 'reaction of the interior of 'the earth on its exterior,' which affords, as it were, the canvas on which to depict the phœnomena of earthquakes, volcanoes, hot springs, &c., we recognise the impress of that theory of geological dynamics which represents the external solid crust of the globe as in a continual though exceedingly slow process of contraction, by refrigeration, on its internal liquid contents, by which it becomes placed in a state of strain, which from time to time, and according to local circumstances affording facilities for disruption, relieves itself by fracture and by the ejection of a portion of the liquid matter. Such, at least, seems to be the conception implied in the word *reaction*, which presupposes *action*. The want of an original *primum mobile* competent to the production of the volcano and the earthquake as general, and not as local phœnomena, is imperatively felt in geology.

As consequences of this reaction, appearing indifferently on

every part of the earth's surface, we have the ejection of *erupted* or '*endogenous*,' and the production of *metamorphic* rocks, together with upheavings and subsidences of portions of the earth's crust of greater or less extent, which in the course of ages modify the distribution of sea and land over the surface of our planet. Simultaneous with these changes, but referring themselves to a totally different order of causes the seat of which is wholly exterior to our globe, and which depend entirely on the action of the sun and moon as the ultimate causes—the *prima mobilia*—of all those oceanic and atmospheric movements to which continents owe their destruction and reproduction, we have the continual formation of new strata at the bottom of the ocean; their gradual condensation by increase of pressure as more and more of their materials become accumulated; and their ultimate consolidation by the invasion of heat from beneath, in virtue of those general laws which regulate the movement of heat from point to point of bodies, the surface of which is maintained at a temperature, which, for this purpose, may be regarded as invariable. From the combination of the two orders of events arising from the continued action of these two classes of causes, each proceeding in perfect original independence of the other, but each in its progress continually modifying the conditions under which the other acts; and so producing a compound cycle, or rather interminable series, of excessive intricacy; depend all geological phœnomena, properly so called. Meanwhile, on this interwoven tissue, as if not yet sufficiently complex, is superposed another cycle of causation in the electro-magnetic relations of the globe, which, though uninfluential as respects the movement of masses, is no doubt powerfully so in the mineralogical arrangement of their particles, in the production of planes of false cleavage in the strata, and in the filling up, by metalliferous and other mineral veins, of the fissures which intersect them. To this class of mineralogical causes (on whose action the researches of Becquerel, Fox, and Hunt have thrown some light, but which stands in need of much more extensive and assiduous inquiry), we are somewhat surprised to find no allusion made in the work before us.

Among the materials of subverted and reconstructed continents, occur the buried remains of their former inhabitants. Palæontology, therefore, and the evidence it affords, in conjunction with other circumstances attending the materials and position of strata, leads us naturally to the consideration of the state of the surface of our globe in former epochs, in relation to its habitability by various orders of organic beings, and more especially to its distribution into sea and land.

'We here indicate a connecting link between the history of the revolutions our globe has undergone, and the description of its present surface,—between geology and physical geography—which are thus combined in the general consideration of the form and extent of continents. The boundaries which separate the dry land from the liquid element, and the relative areas of each, have varied greatly during the long series of geological epochs: they have been very different, for example, when the strata of the coal formation were deposited horizontally upon the inclined strata of the mountain limestone and the old red sandstone; when the lias and the oolite were deposited on the keuper and the muschelkalk; and when the chalk was precipitated on the slopes of the green sand and the oolitic limestone. . . . . Maps have been drawn representing the state of the globe in respect of the distribution of land and water at these periods. They rest on a more sure basis than the maps of the wanderings of Io, or even than those of Ulysses, which at best represent but legendary tales, whilst the geological maps are the graphic representations of positive phœnomena.'

We find ourselves thus introduced to the domain of physical geography, or the description of the actual state of the earth's surface in its three great divisions,—those of land, sea, and air,—as prepared for the habitation of organic beings, and as exhibiting the play of all those complex agencies on which depend the distribution of temperature and moisture, aerial and oceanic currents, and those conditions which, under the general title of climate, determine the abundance and limits of vegetable and animal forms. A general view of organic life and the distribution of plants and animals, infinitely less copious in detail than we should have expected from the exceeding richness of M. de Humboldt's information on this subject, and a short chapter on Man close the text; which is followed by a series of notes, indicating the authorities from which the statements throughout are derived, and full of a vast mass of other information, so interesting, so recondite, so various, as to leave us lost in admiration, both of the reading which could amass, and the discrimination which could select it.

The dimensions and figure of the earth constitute a branch of inquiry on which, perhaps, more pains, labour, and refinement have been lavished than on any other subject of human research. 'The history of science,' says M. de Humboldt, 'presents no 'problem in which the object obtained, the knowledge of the 'mean compression of the earth, and the certainty that its figure 'is not a regular one, is so far surpassed in importance by the 'incidental gain which, in the course of its long and arduous 'pursuit, has accrued in the general cultivation and advancement 'of mathematical and astronomical knowledge.' In fact, however, the benefit conferred has not been confined to these. The con-

tinual heaping on of refinement upon refinement, in respect both of instruments and methods, has been far from a mere barren and ostentatious accumulation. On the contrary, it has overflowed on all sides, and fertilised every other field of physical research, by the example it has set, and the necessity it has imposed of exactness of numerical determination, mathematical precision of statement, and rigorous account taken of every influential circumstance; as well as by the numerous physical elements whose exact measures and laws it has incidentally required to be known as data. By the improvement of our knowledge of these, the aspect of all science has been changed, and the apparently disproportionate application of talent and cost which have been brought to bear upon the subject, repaid with interest. The fixation of national standards of weight and measure, which has become indissolubly interwoven with it, has ever marked, and will ever continue to mark, the highest point to which human skill and refinement in the application of science to practical objects are capable of attaining.

In stating the result of these inquiries, M. de Humboldt follows the determination of Bessel in 1841. A better authority he could not have selected, and it is worth while to notice (since he has omitted to do so) the precise coincidence of this determination with that of Mr. Airy in 1831, from the assemblage of all the geodesical measurements *then* procured, — a coincidence amounting in fact to identity, the difference between the two statements of the earth's equatorial diameter being but 234 *feet*, between those of the polar only 296, and of the compression 38. Neither can we omit to mention here the only considerable accession to our knowledge on this head since the publication of 'The Kosmos,' viz. the rectification of Lacaille's erroneous arc at the Cape, by the admirable and indefatigable Maclear (performed at the hazard and almost at the sacrifice of his life), which has removed for ever one of the great stumbling-blocks in the way of general and exact conclusions on this subject.

The ellipticity of the earth, as Playfair has shown, can by no means be taken as affording even the slightest evidence of the entire primitive fluidity of its whole mass. Even when that of the internal strata is taken into the account, if there be any degree of mobility, from whatever cause arising short of entire and simultaneous fluidity, among its materials, this would ultimately conform its internal arrangement, as the sea does its external form, to the elliptic model. We do not mean to deny the strong presumption, however, that such fluidity does prevail at a certain depth: 'Tolerably accordant experience has shown 'that in Artesian wells the average increase of temperature in

'the strata passed through, is 1° of the Centigrade thermometer 'for 92 Parisian feet of vertical depth (54·5 English feet for 1° 'Fahr.). . . . If we suppose this increase to continue in an 'arithmetical ratio, a stratum of granite would be in a state of 'fusion at a depth of nearly 21 geographical miles.' The phœnomena of hot springs in countries where volcanic eruptions have long since ceased; 'direct observation of the temperature 'of rocks in mines; and, above all, the volcanic activity of the 'earth, ejecting molten masses from opened clefts or fissures, 'bear unquestionable evidence of this increase for very consider-'able depths in the upper terrestrial strata.' Still we can determine nothing with certainty respecting the depth at which the materials of our rocks exist, 'either in a softened and still tena-'cious state, or in complete fusion; respecting cavities filled 'with elastic vapours; *the condition of fluids heated under enor-'mous pressure*; or the law of the increase of density from the 'surface to the centre.' One thing only is certain, that the density *does* so increase, since the wonderfully agreeing conclusions arrived at by Cavendish, Reich, and Baily (for such they ought assuredly to be considered, the difference between Baily and Reich amounting to no more than one twenty-eighth part) abundantly demonstrate a mean density for the whole mass of five and a half, which is double that of basalt, and more than double that of granite; substances which undoubtedly emanate from very great depths beneath the surface.

The mean temperature of the globe is supposed to have attained so nearly an invariable state, that since the time of Hipparchus, and in an interval of 2000 years, it has not diminished by one three-hundredth of a degree of Fahrenheit's thermometer. This conclusion rests on the records of ancient eclipses, which having taken place in conformity with the theory of gravitation, implies the invariability of our unit of time or of the length of the day, during the interval. Hence Laplace has concluded, and the conclusion may be regarded as certain, that the length of the day, or the time of rotation of the earth on its axis, has not diminished by one hundredth part of a second. Hence also we are entitled to conclude that its mean radius has not diminished by a single yard in that interval. So far we are on sure ground: and if we consent to disregard as merely superficial, the transfer of matter from a higher to a lower level by oceanic and atmospheric abrasion, and the counteracting effect of volcanic ejections,—if, moreover, we set as in a balance one against the other, the upheavings of mountain chains, such as our own times have witnessed in the Andes, and the subsidences of extensive districts, such as are going on in Scandinavia, the

conclusion, as relates to temperature, must be admitted as valid, however it may be supposed to militate against the refrigeratory theory above alluded to.

The mean temperature at which the *surface* of the earth is maintained, if we consider the average of the whole globe, depends solely on external causes, the only one of which, worth considering as really influential, is the sun's radiation. Of the constancy or variability of this from year to year, or from century to century, we know nothing, though from the analogy of periodical or changeable stars we may surmise anything. But it by no means follows that this ignorance, on a point of such immense importance, is to continue. It is to the temperature of the ocean, continually and carefully observed in those parts of its surface where its changes are least (in the equatorial region, from 10° N. to 10° S.), that we must look, with the greatest probability of ultimate success, for the solution of this difficult but interesting problem. In these regions, the observations and researches of M. de Humboldt himself have established the fact of 'a wonderful uniformity and constancy of temperature 'over spaces of many thousand square miles.' It is here, therefore, that observations directed to this object can be made to the greatest advantage, and least exposed to the influence of casual and temporary disturbance. We know of no class of observations deserving more the attention of voyagers: and the more so, as the recent results of Mr. Caldecott respecting the temperature of the *soil* at considerable depths in India, have brought into evidence *enormous* differences, amounting to 6° between the *mean temperatures* of the earth and air at the same spot. Such might indeed have been expected on a careful consideration as to the different agencies of wind and rain on the one hand, and solar and nocturnal radiation on the other, in determining the respective averages, but they stand in striking contradiction to the generally received opinion of the necessary equality between the two means in question. It ought to be remarked, that M. de Humboldt, when stating this opinion, (p. 165. Tr.) and the practical application of it recommended by Boussingault, expresses himself with hesitation, if not with doubt on its subject.

The power of magnetism, and the polarity of the magnetic needle, appear to have been known to the Chinese from the most remote antiquity. Extracted from the annals of See-ma-thsian, a Chinese historian cotemporary with the destruction of the Bactrian empire by Mithridates I., we find the following extraordinary relation. "The emperor Tching-wang (1110 years before our 'era) presented to the ambassadors of Tong-king and Cochin

'China, who dreaded the loss of their way back to their own 'country, five magnetic cars, which pointed out the south by 'means of the moving arm of a little figure covered with a vest 'of feathers.' To each of these cars, too, a hodometer, marking the distances traversed by strokes on a bell, was attached, so as to establish a complete dead reckoning. (Humboldt, Asie Centrale, xli.; Kosmos, 171.) Such inventions, we cannot but observe, are not the creation of a few years, or a few generations. They presuppose long centuries of previous civilisation, and that too 'at an epoch cotemporary with Codrus and the 'return of the Heraclides to the Peleponnesus'—the obscure dawn of European history! Even the declination of the needle, or its deviation from the true meridian, was known to this extraordinary people at the epoch in question.

Two views of terrestrial magnetism may be taken. The one is that which makes the earth itself, or a large portion of the substance of it, intrinsically magnetic in that sense in which a loadstone is so. This view (which is at all events general, and but for the secular variations of the magnetic curves, would be even now perhaps the best which could be taken,) is vindicated by M. de Humboldt to our admirable countryman Gilbert, whose ideas were, in all physical matters, far in advance of his age (note 142.). It was the knowledge of these variations which led Halley to the formation of his wild as well as inadequate theory of an internal globe revolving within the external shell of the earth. If the mass of the globe be magnetic in the sense of the loadstone, it is scarcely conceivable that the local distribution of magnetic power on its surface should be otherwise than permanent. That it is not so—that the magnetic curves, one and all, are in a continual state of slow but regular change, *sweeping round upon the two hemispheres in contrary directions* (by which very act their forms are undergoing continual modification), we cannot help receiving as an indication that the seat of the earth's magnetism, if not entirely atmospheric, is at least so far superficial as to be subject to a large amount of external influence: seeing that they bear relation neither to any fixed lines in the globe itself on the one hand, nor to any determinate directions in external space on the other. The explanation of these secular variations is perhaps the obscurest problem which the 'Physique du Globe' has yet offered for solution; and its solution, when known, cannot fail to carry with it the explanation of every other part of the phœnomena.

Meanwhile it is certain that the phœnomena of the magnetic needle, and its direction at each point of the surface, may, to a certain extent, be imitated on an artificial globe, by passing round

it at the surface a due system of electro-magnetic currents. This was actually done by the late Professor Barlow. To a slowly and *secularly variable* system of electric currents, therefore, whether atmospheric or terrestrial, all probability refers us as the cause of the earth's magnetism. And here we are brought to a stand, not only by the very imperfect state of our knowledge in respect of atmospheric electricity, of all the branches of meteorology the least advanced; but also by our ignorance of the actual forms of the magnetic curves over many and extensive regions of the earth, to say nothing of their secular changes. This blank area, however, is happily diminishing rapidly under the pressure of surveys set on foot in pursuance of that noble plan of co-operative magnetic research which, (thanks in the first instance to M. de Humboldt's powerful recommendation,) has been adopted and acted on by our own and other Governments upon a scale and with a sequence and energy to which no age has furnished a parallel. Within the interval, short of ten years, since the adoption of this system, the whole area of the Antarctic Ocean has been added to the domain of exact magnetic knowledge by the expedition under Sir James C. Ross, and by the subsequent survey of Lieutenants Moore and Clerk. British North America has become in like manner known ground by the survey of Lieutenant Lefroy, to which has been, or is in the course of being, added, that of the United States by Locke, Loomis, Bache, and other able and indefatigable observers. The expedition of Sir John Franklin, speedily, we trust, to return crowned with merited success, taken in conjunction with the survey of Hudson Bay, accomplished in the course of last summer by Lieutenant Moore, will complete our knowledge of the northern coast, and give to the continent of North America its due significance on the magnetic chart of the globe. Nor are these the whole, or any thing like the whole, of the acquisitions recently made and still making in this direction, which, however, our limits will not permit us further to dilate on, or to give their merited tribute of applause to the indefatigable exertions of the able editor of the work before us, in deducing from the vast mass of observations thus continually pouring in, the true forms of the magnetic curves, and in particular of the isodynamic lines and ovals which, although the last to be received into the list of magnetic elements, have proved the most interesting and important of any. The service thus rendered to magnetic science, it is in fact impossible to overappreciate.

Whatever idea we may form of the greater and more regular magnetic system of our globe, there can hardly remain a doubt

as to the reference of the diurnal and annual periodic fluctuations of the magnetic elements to electric currents in the earth or atmosphere caused by solar excitement. Nor can there be any hesitation in referring to sudden and violent disturbances of electrical equilibrium, from whatever cause arising, those mysterious phœnomena to which M. de Humboldt (the first to observe, or at least strongly to draw attention to them,) has given the expressive name of magnetic storms, and in which the needle is agitated simultaneously over vast regions, whole continents, nay, even in some cases, *over the whole surface of the globe*. Of these the most remarkable on record is that of the 24th and 25th of September, 1841, which was observed at Toronto, in Canada, at Prague, at the Cape of Good Hope, at Van Diemen's Land, and at Macao. And here we cannot omit to notice the very remarkable coincidence of date between this and a great and extraordinary disturbance, which has quite recently been observed at Toronto, and of which the account by Lieutenant Lefroy is before us. The range of the needle, in respect of horizontal direction, on this occasion exceeded 4°, and the fluctuation in respect of horizontal intensity surpassed *a twentieth part of its total amount*. Now this disturbance (which was observed at Greenwich, though to not quite so great an extent) also took place on the 24th of September! A coincidence of this kind, should it be repeated, like that of the meteoric showers, would lead us irresistibly, and as an *instantia lucifera*, to look outwards, into the planetary spaces, for the cause of these singular phœnomena.

Intimately connected with these irregular magnetic disturbances, and characterised by M. de Humboldt as the final discharge which restores the magneto-electric equilibrium, wrought to a climax of tension during their continuance, is the aurora or polar light. Of one variety of this superb phœnomenon, that which consists in luminous beams and dancing streamers, terminating in a corona round the place of the elevated magnetic pole, he gives a most picturesque and beautiful description. The other, rarer, and less vivid in its phases, but perhaps in some respects even more interesting; that which consists in quiet luminous masses, either insulated or forming more or less regular arches transverse to the magnetic meridian, and *drifting constantly with a slow and steady movement* southward, he passes in silence. In both we recognise, by many indications, the presence of matter in the higher regions of the atmosphere, rendered luminous by the passage of electricity, but differing in the two cases in the mode of its arrangement, and perhaps, too, in elevation; the arrangement in the former being in lines

parallel to the dipping needle; in the other sometimes in amorphous masses, at others with a strong tendency to a transverse position. Is it possible that the distinction between the magnetic and diamagnetic forms of matter, brought to light by Faraday's late researches, may play a part in these arrangements?

The height of the auroral phœnomena has been a subject of very varying estimation, and if we allow that, as M. de Humboldt expresses it, 'every observer sees his own aurora as cer-'tainly as he sees his own rainbow,' it must be evident that no parallactic mode of determining its height is practicable. This, however, applies only to the first of the above-mentioned species of aurora, where, from the number and rapid coruscations of the streamers, no one can be individualized and definitely fixed. The luminous masses and transverse arcs of the other variety have assuredly an optical *reality* — are *objects*, and capable of being seen in their true geometrical places by any number of spectators at once. It is impossible, in short, that a body of light, steady enough to be definitely referred by one observer to one given direction in space, and by another to another at the same instant, should not have an objective locality. The arcs of October 17. 1819, and March 29. 1826, whose heights, as calculated by Dalton from very positive data, appear to have been nearly equal (100—110 miles), were certainly in this predicament; nor do we consider his conclusions as at all shaken by the objections advanced against them by Dr. Farquharson. On the other hand, M. de Humboldt appears disposed to doubt the reality of auroral *streamers* having been seen below the clouds; but on this head the observations of the last-named excellent observer on the aurora of February 24. 1842, are so positive and circumstantial, as to leave no room for doubt. The crackling or hissing sound, reported to accompany their displays in high latitudes, he considers as altogether apocryphal. It is not among the least puzzling features of auroral phœnomena, that although so intensely *magneto-electric as actually to interfere with the free transmission of messages along the electric telegraph*, experiments made during their continuance with very sensitive electrometers have hitherto given only negative results, since, during the finest auroras, no change in the electric tension of the atmosphere has been detected. (Kosmos, 186., Tr.)

On the subject of earthquakes and volcanoes, those great manifestations of internal telluric activity, there is probably no geologist now living who can speak so largely from personal knowledge as M. de Humboldt — who has had such opportunities of studying their phœnomena in that region of the globe where they are habitually developed on the grandest and most

terrific scale, as an eye-witness, or by diligent and immediate inquiry on spots the recent scenes of some of the greatest catastrophes on record. The tremendous convulsions which, in 1797, destroyed Riobamba, with the loss of between 30 and 40,000 lives in a few minutes, with 'a sudden and mine-like 'explosion, a vertical action from below upwards,' which hurled the corpses of many of the unfortunate sufferers several hundred feet in height on a neighbouring mountain, and across a river, took place only three years before his arrival in Quito, the city lying still in ruins, and every particular, of course, vividly fresh in the recollection of the survivors. The catastrophe which destroyed Cumana took place in the same year. The personal narrative of his travels has made us familiar with the volcanoes of Quito, Mexico, and Chili, and given to the names of Cotopaxi, Pichincha, Tunguragua, and Jorullo, a terrible, yet fascinating, celebrity. With his extraordinary account of the last-named volcano, with its Malpais and Hornitos, there are probably few of our readers unacquainted.

We shall not enter here into any of the speculations current among geologists which have for their object to render an account of the ultimate origin of earthquakes, and the immediate seat of their first impulse. It is to their propagation along the superficial strata, and especially with the mode in which that propagation is dynamically effected, that inquiry can be most usefully, because most effectively, directed. Every one, indeed, is agreed that it is in some sense undulatory; but probably no two geologists have hitherto exactly agreed as to the sense in which that term is to be taken: whether, for instance, the undulation be analogous to that of a fluid surface, or of a stretched sheet, or, lastly, to that by which waves are propagated through elastic media in the conveyance of sound and light, viz., not by lateral tension or by gravity, but by the direct elastic action of the particles on each other. It is here that experience furnishes us with an unequivocal indication in the recorded velocity of their propagation, estimated by M. de Humboldt at twenty-eight geographical miles per minute, which, however, is probably underrated, and which, at any rate, exceeds double that of sound; a velocity, as Mr. Mallet has justly remarked in a paper read before the Royal Irish Academy in 1846, incompatible with any imaginable mode of propagation but that last alluded to. This is, accordingly, the view of the subject which Mr. Mallet adopts, and which, on the whole, appears to render a clear and intelligible account of many of the apparently bizarre and capricious phœnomena with which the records of these events abound; such, for example, as the reversal of the

stones of a pavement, and the twisted obelisks of Stephano del Bosco by the Calabrian earthquake; the confusion of fields and boundaries; and the strangely irregular intermixture of lines of violent action with others of comparative repose, resulting from nodal intersections and interferences of shocks arriving at the same point from different origins or by routes of different lengths. Such interferences, we must observe, are expressly indicated by M. Humboldt (p. 192.) as resulting from intersecting earthquake waves, 'as in intersecting waves of sound;' adding, moreover, —

'The magnitude of the waves propagated in the crust of the earth will be increased at the surface, according to the general law of mechanics by which vibrations transmitted in elastic bodies have a tendency to detach the superficial strata.'

What may be the mechanical law here alluded to we know not. Probably the scaling off of brittle coatings from hard bodies by a blow. But we cannot help supposing the true mode of earthquake propagation (by waves of elastic compression) to have been apprehended with very considerable distinctness in penning this passage, though not seized and worked out, as it might have been, into a regular theory. We will only notice, in further illustration of the explanatory power of this mode of conceiving the matter, the facility with which the singular effect of vorticose motion is accounted for by the crossing of two waves of horizontal vibration, which, as in the theory of the circular polarization of light, compound, at their point of intersection, a rotary movement.

That a theory so simple, and, we may add, so obvious, has not been earlier propounded and received, can only be accounted for by the vast scale of the phœnomena and the amplitude of the earthquake wave, which causes the wave itself, as 'an advancing 'form,' to escape notice, and the molecular motions only by which it is propagated to be perceived. For in this theory we are to bear in mind that man and his works are but, in respect of these gigantic movements, what the sand spread by Chladni on one of his vibrating plates is to the sonorous vibration it furnishes the means of examining.

What the auroral discharge is to the 'magnetic storm,' in M. de Humboldt's view of that phœnomenon, and, as appears to us, with far more correctness, the volcano in eruption is to the earthquake — the relief of tension and the restoration of equilibrium. Innumerable instances of this connexion might be adduced, but the subject is rather trite, and our limits begin to warn us that we have yet a wide extent of ground to travel over, and we must therefore pass over, not without regret, the

evidences of diminishing volcanic action afforded by the phœnomena of Solfaterras and hot springs, as well as those of interior heat generally, as manifested in the continued ejection of carburetted hydrogen, of which See-tchuan, in China, and Fredonia, in New York, offer the most striking examples; as well as those of carbonic acid which, in many parts of Germany and on the Rhine, 'indicate the last remains of volcanic activity in and 'near its ancient foci in an earlier state of the globe.'

In the 'Geological Description of the Earth's Crust,' two distinct classifications or arrangements are followed, which, perhaps, we can hardly better characterise in contrast with each other than as *genetic* and *historical*. The former is in consonance with that view of superposed causalities which we have taken of geological phœnomena in general. It refers itself to the presumed origin, and not to the historical order of the matters classified. This would naturally divide the rocks of which the earth's crust is composed into two orders: *endogenous*, having their origin from the internal activity of the earth; and *exogenous*, arising from the degradation of continents by external force, and their reconstruction in new localities by aqueous deposition. But these causes being in perpetual and simultaneous action, it becomes necessary to admit two other members into this general classification, in whose formation as they exist at present both orders of genetic cause have had a share; those namely, first, in which deposited rocks have been altered in texture, density, and mineralogical characters by subterraneous heat either slowly invading them by conduction from below, or suddenly applied by eruptive energy forcing melted matter into contact with them, and introducing new materials into their composition by sublimation, (as in the view taken by Von Buch of the Dolomitic limestone of the Tyrol). The second member of the series resulting from this complex action comprises rocks constructed by recementation of fragments and pulverised matter, whether produced by the violence of eruptive agency, or by the slower process of water washing and the action of torrents or debacles. Thus we have at length a fourfold division of the materials of the earth's exterior, into erupted, sedimentary, metamorphic, and conglomerate rocks.

In subdividing the erupted rocks little importance would attach to oryctognostic character, except in so far as it can be connected with indications of the depth from which they may have been erupted, the scale upon which their expulsion from the bosom of the earth may have been effected, and the state of fluidity at which they may have arrived at the surface. These give rise to a system of characters partly mineralogical and

partly geological, in which granite and syenite stand at the lower end of the scale, and basalt and superficial lavas at the upper, while porphyries, greenstones, serpentine, hypersthene rock, and trachyte, fill up the intermediate stages. Some particulars, given by M. de Humboldt, respecting the superposition of granite, will be found interesting, when we recollect at how comparatively late a period the idea of overlying granite was considered almost to amount to a contradiction in terms: —

'In the valley of the Irtysch, between Buchtarminsk and Ustkamenogorsk, granite covers transition slate for a space of four miles, and penetrates it *from above downwards* in narrow branching veins, having wedge-shaped terminations. . . . As granite covers argillaceous schists in Siberia and in the Departement de Finisterre (Ile de Mihau), so does it cover oolitic limestone in the mountains of Oisons (Fermonts), and syenite and chalk in Saxony near Weinböhla.'

To these instances we may add the valley of Lavis, in the Tyrol, near Predazzo, where it overlies dolomite. The true reason for the rarity of these granite superpositions is doubtless to be sought in the very slight degree of fluidity of the upper portions of the upheaved masses, and their vast thickness, which permits but rare opportunities for escape of the more liquid matter from below. A beautiful granite dyke is seen intersecting granite perfectly similar, and no doubt nearly cotemporaneous, on the summit of the Paarl Rock near Stellenbosch, in South Africa, as if the fissured rock had been re-cemented in the very act of rising by an upward injection, which in cooling has arranged itself in parallel layers, nearly at right-angles to the general direction of the vein.

Sedimentary rocks are necessarily classified according to their geological order of superposition, and are made to consist of — 1. Argillaceous schists of the transition series, including the Silurian and Devonian formations; 2. Carboniferous deposits; 3. Limestones; 4. Travertin; 5. Infusorial masses. From this series M. de Humboldt excludes all purely mechanical deposits of sand and detritus, regarding them as in strictness belonging to the conglomerate division. The abundance of limestones in the latter portions of this series he considers as a result of the decreasing heat of the superficial waters allowing of their absorbing carbonic acid from an atmosphere overcharged with that element.*

* The exceeding readiness with which newly precipitated carbonate of lime subsides in warm water, compared with what takes place in cold, especially when certain saline substances are present, is a chemical fact which may have some bearing on this point.

The process of metamorphism (a term first introduced into geology, we believe, by Lyell) is very obscure. That electrical action is often concerned in it, we can hardly doubt. The portion of M. de Humboldt's work which treats of it is full of interest, but we cannot afford room for remark or extract, further than to notice the singular difficulties which beset any geological account of the vast beds of pure quartz, from *seven to eight thousand feet in thickness*, characteristic of the Andes of South America. In the older Plutonic theories, indeed, these would be easily dealt with. Modern speculation, however, is scarcely hardy enough to draw so largely on internal heat as would be necessary to fuse and erupt such masses of so intractable a substance. Their consolidation from sandy deposits by partial fusion under the transforming influence of adjacent rocks (as Murchison proposes to account for the phœnomena of the Caradoc sandstones) is subject to hardly less difficulties. The chemistry of long-continued heat under pressure, the production of artificial simple minerals, and the imitation of metamorphic changes on rocky substances, by contact with heated matter, open a field of inquiry deserving of more cultivation than it has hitherto obtained.

The same reason which renders it necessary to limit our remarks on this portion of the subject of geology, compels us to pass over entirely the view which M. de Humboldt takes of the historical department of that science, and the order of succession of the forms of animal and vegetable life which modern geological research has revealed to us as the denizens of our planet in the previous stages of its existence. We should do so with extreme regret, (since the sketch which is given, though in the utmost degree condensed, is arranged in a very luminous and masterly manner,) were it not that, although ranking high as a geologist, his own personal contributions to that science belong rather to the lithological than to its palæontological department; and were it not too that an extensive knowledge of the main features of these grand disclosures is very generally diffused in this country. We shall prefer, therefore, to devote what room remains to us to those subsequent portions of his work, where the light which he directs upon them is mingled with many and bright rays emanating immediately from himself.

Among the leading features of that part of the general contemplation of nature which relates to the PHYSICAL GEOGRAPHY of our globe in its actual state, we must regard, first, the quantity of land raised above the water; next, the configuration of each great continental mass in horizontal extension and vertical elevation. That all, or nearly all, the existing land has been so

raised, M. de Humboldt regards as an established truth, and considers a considerable part of the height of all the present continents to be due to 'the eruption of the quartzose por-'phyry, which overthrew with violence the first great terres-'trial Flora, the material of our coal beds.' Previous to this, the portion supporting land vegetation was exclusively insular; nor was it until the epoch of the older tertiary formations that the great continents approached to their present form and extent.

The ratio of sea to dry land is stated at 270 or 280 to 100, or in round numbers as about 3 to 1, the islands amounting to one twenty-third of the continental masses. As regards the general distribution of sea and land, M. de Humboldt confines himself to observing that the northern hemisphere contains nearly three times as much land as the southern, and the eastern (from the meridian of Teneriffe) far more than the western. This mode of statement, however, conveys a much less lively and distinct impression of the law of distribution than the division (suggested by Colson, Phil. Trans. vol. xxxix. p. 210.) of the globe into two hemispheres, a terrene and an aqueous one, the former having Great Britain, the latter her antipodes, for its vertex.* In fact, if we endeavour to include the maximum of land in one hemisphere, and that of water in the other, according to our present knowledge of the globe, we shall find as the centre of the terrene hemisphere a point in the south of England somewhat eastward of Falmouth. With exception of the tapering termination of South America, the land in the other is wholly insular, and were it not for New Holland, its amount would be quite insignificant. As protuberance above the sea level indicates comparative levity, are we not thence entitled to conclude the non-coincidence of the centre of gravity of our globe with its centre of figure, the denser portion being situate beneath the South Pacific?

On the general form of the land we find some striking remarks. The southern terminations of the great continental masses affect the pyramidal form, which is repeated on a smaller scale in the peninsulas of India and Arabia, &c., while generally, prolonged appendages, both to the northward and southward, affect a meridional direction. Eastern and western coasts, we may add, are for the most part rounded, though the eastern occasionally present instances of angular forms (as Brazil, and Labrador in America, Azania (Adel) in Africa, Oman in southern and

* See a chart of the two hemispheres on the horizon of London. Hughes. London, 1839.

Tschutschki in northern Asia. The major axis of the Asiatic continent (to which Europe is a peninsula) is at right angles to that of the American; though perhaps South America is rather to be considered as analogous to Africa, not only from its remarkable similarity of general form, but also from the singular thread-like adhesion of each to its neighbouring northern mass. Were these threads broken, every commercial relation, and almost every climate of the civilised world, would undergo the most remarkable changes.

'The general direction of the land of Europe is from south-west to north-east, and is at right-angles to the direction of the great fissures, which is from north-west to south-east, extending from the mouths of the Rhine and the Elbe, through the Adriatic and Red Sea, and the mountain system of Puschti-koh in Luristan, and terminating in the Indian Ocean. This rectangular intersection of the Continent in the direction of its principal extent, has powerfully influenced the commercial relations of Europe with Asia and the north of Africa, as well as the progress of civilisation on the formerly more flourishing shores of the Mediterranean.'

M. de Humboldt has been at great pains to arrive at a knowledge of the mean elevations of the chief continental masses, above the sea-level, which (in English feet) he states as follows. For Europe 671 feet, North America 748, Asia 1132, South America 1151. For Africa we have no sufficient data. 'La-'place's estimation of 3078 feet (French) as the mean height of 'continents, is at least three times too great. The illustrious 'geometer was conducted to this erroneous result by hypothesis 'as to the mean depth of the sea' (note 360). The chain of the Pyrenees, if equably spread over France, would raise its surface according to his estimate 115, and the Alps over Europe 21·3 English feet. The former of these estimates certainly gives us a greater idea of the magnitude of the natural barrier between France and Spain, than any ordinary exaggeration of language or poetical description would do. M. de Humboldt closes this part of his subject with the following comfortable reflection: —

'Since Mont Blanc and Monte Rosa, Sorata, Illimani, and Chimborazo, the colossal summits of the Alps and the Andes, are considered to be among the most recent elevations, we are by no means at liberty to assume that the upheaving forces have been subject to progressive diminution. On the contrary, all geological phœnomena indicate alternate periods of activity and repose. The quiet which we now enjoy is only apparent; the tremblings which still shake the surface, in every latitude and in every species of rock, — the progressive elevation of Sweden, and the appearance of new islands of eruption, — are

far from giving us reason to suppose that our planet has reached a period of final repose.'

The phœnomena of the ocean may be considered with reference to its depth, temperature, density, and to its motions as agitated by waves, tides, and currents. With respect to its depth, except near shores and in frequented tracks, we know almost nothing. Theoretical considerations indicate a *mean* depth of 'a small fraction of the ellipticity of the earth,' which can hardly be interpreted at more than four or five miles. Ross sounded (in 15° 3′ south, 23° 14′ west) without finding bottom at 27,600 feet (about five miles and a quarter), which is the greatest depth yet attained.

As regards the temperature of the ocean, the observations of Kotzebue in his voyage round the world appear first to have indicated, those of Beechey in his voyage to the Pacific to have (so far as they go) supported, and those of Sir James C. Ross in his recent Antarctic voyage to have established almost beyond a doubt, the extraordinary fact that the deep sea water, below a certain level determined by the latitude, is of one invariable temperature throughout the globe, *and that temperature a very low one*, the calculations of Lenz, founded on Kotzebue's results, giving 36° Fahr., and those of Ross 39°·5. The depth at which this temperature is attained, according to the latter authority, is 7200 feet at the equator, diminishing to 56° 26′ south latitude where it attains the surface, and the sea is of equable temperature at all depths. Thence again the upper surface of this uniform substratum descends as the latitude increases, and at 70° has already attained a depth of 4500 feet. Similar phœnomena would appear to occur in proceeding from the equator northward, the circle of constant temperature being repeated nearly in the same latitude. Thus the ocean is divided into three great regions, two polar basins in which the surface temperature is below, and one medial zone in which it is above 39°·5, being 80° at the equator, and at the poles of course the freezing point of sea water. It will be very readily understood that in this statement there is nothing repugnant to hydrostatical laws, the compressibility of water insuring an increase of density in descending within much wider limits of temperature than here contemplated.

The physical consequences of this great law, should it be found completely verified by further research, are in the last degree important. One of them, noticed by Ross, is, 'that the 'internal heat of the earth exercises no influence upon the mean 'temperature of the ocean,' *a conclusion not very easy to reconcile with the theory of central heat itself*, or at least with its regular

distribution. Another is the complete destruction of the notion of submarine currents setting from the poles towards the equator, caused by the subsidence of cold water in high latitudes. On the contrary, the actual disposition of things would necessitate a constant *superficial* flow of cold water from the poles towards the equator, and of warm from the equator towards the poles, in abatement of the polar and equatorial excesses of level; a mingling of these overflows on, or about the parallels of latitude where the mean temperature is found; and their descent there in maintenance of a continual, but merely superficial triple system of circulation. If any deep-sea currents could arise at all from such a state of temperature, it must be in consequence of the descent of water rendered salter by evaporation at the tropics, unless indeed (as is conceivable) the circulation of salt as well as of heat should be also confined to the superficial strata. Enough, however, of these considerations, which are leading us astray from our guide.

M. de Humboldt passes very cursorily over the vast and complex subject of the tides, into the somewhat flagging interest of which a fresh vitality has been of late years infused by the striking researches of Whewell into the laws of propagation of the tide wave, which he has taken up as a matter of inductive inquiry; thereby exchanging the slow and arduous struggle of the geometer with almost insuperable obstacles, for the animating pursuit of practical laws. The elaborate inquiries of Airy also into the combined theory and practice of tide observation, have added to this reviving interest, and their joint labours have made this part of the Newtonian doctrine once more an English subject, which it had long well nigh ceased to be. On the other hand, the great ocean currents resulting from the general set of the trade winds and the friction of the tide wave on the bed of the ocean (adopting Weber's view of undulatory motion), are described with much spirit. The great current of the gulf stream, to which we are indebted for the genial warmth of our south-western coast, is one result of this movement, and is too well known by the descriptions of all voyagers, and the elaborate researches of Rennell, to require notice here. Not so the counterpart of this current in the South Pacific, first brought into notice by M. de Humboldt in 1802. This current drifts the cold water of the South Seas along the western coast of South America, as far as the extreme north-westerly projection of that coast, where it is suddenly deflected outwards in a due west direction into the open ocean, and there ultimately lost. At this point its waters are nearly 24° Fahr. colder than those of the general surrounding ocean, and so sharply marked is its

course, that a ship sailing northwards passes quite suddenly from cold into hot water.

As the scene of a wonderfully diversified and exuberant life, both vegetable and animal, but especially the latter, the ocean also claims our attention. To say nothing of those colossal forms which, divested by the buoyancy of the medium in which they subsist, of the incumbrance of *weight*, are left free to exert the whole of their giant power to overcome its resistance, we find in the minuter forms of animal existence an unbounded field of admiring contemplation.

'The application of the microscope increases still farther our impression of the profusion of organic life which pervades the recesses of the ocean, since throughout its mass we find animal existence, and at depths exceeding the height of our loftiest mountains the strata of water are alive with polygastric worms, cyclidæ and ophrydinæ. Here swarm countless hosts of minute luminiferous animals, mammaria, crustacea, peridinea, and ciliated nereides, which, when attracted to the surface by peculiar conditions of weather, convert every wave into a crest of light. The abundance of these minute creatures, and of the animal matter supplied by their rapid decomposition is such that the sea-water itself becomes a nutritious fluid to many of the larger inhabitants of the ocean. If all this richness and variety of life, —

M. de Humboldt goes on to add, in that vein of thoughtful poesy in which he indulges in several parts of this work, and to which, in truth, it owes much of its charm,

'— containing some highly organised and beautiful forms, is well fitted to afford, not only an interesting study, but also a pleasing excitement to the fancy; the imagination is yet more deeply, I might say, more solemnly, moved by the impression of the boundless and immeasurable which every sea voyage affords. He who, awakened to the inward exercise of thought, delights to build up an inner world in his own spirit, fills the wide horizon of the open sea with the sublime idea of the infinite; his eye dwells especially on the distant line where air and water join, and where stars arise and set in ever renewed alternation. In such contemplations there mingles, as in all human joy, a breath of sadness and longing.'

As the sea, no doubt, holds in solution some small proportion of every soluble body in nature, so, besides the two great chemical elements of which dry air consists, and its variable constituent of aqueous vapour, there is probably no vaporisable body of which the atmosphere does not contain some trace. And from what we know of the influential part played in the economy of nature by one or two of these subordinate constituents, we can hardly doubt that others, whose presence has not hitherto been actually detected by analysis, have functions of high im-

portance assigned to them in that economy. On the carbonic acid which constitutes less than the two thousandth part of the atmosphere, all vegetation depends for its supply of carbon; and Liebig has shown that to the presence of ammonia, in far less proportion, the rain water owes its fertilising power. To the occasional production of ozone, the most powerfully bleaching and oxidating substance in nature, by electric discharges, though in proportion inconceivably minute, we probably owe the disinfection of the air from a variety of noxious miasmata, thus verifying by one of the most delicate results of scientific inquiry, the vulgar notion of the purifying agency of thunder storms.

Meteorology, however, has no concern with these minute chemical admixtures — the only distinction it recognises is that of air and vapour, and this only because these form, in fact, two distinct, and to a great extent independent atmospheres, subject each to its own peculiar laws (and those laws widely different), and each reacting on the other solely by mechanical impulse and resistance. In the movements and affections of these two atmospheres by the sun's heat, the one permanent in material and constant in quantity, the other in a continual state of renovation and destruction; we recognise, as in geology, the simultaneous agency of two distinct systems of causation, superposed and modifying each other's effects — but with this advantage on the side of meteorology, that their agency is limited to definite annual and diurnal cycles, corresponding to those of the supply of solar heat, rendering their study, so far, easier. Here also we have to deal with electricity as a third element, but we strongly incline to the opinion, that its agency as a meteorological *cause*, is exceedingly limited, indeed that it may be altogether left out of the account as productive of any meteorological effect of importance on the great scale.

It is by no means, however, in its general connexion as a science, that M. de Humboldt considers this vast and complex subject. The view which he takes of it regards only its final and practical bearings on climate as a part of physical geography, and that under very general heads, viz. the variation of atmospheric pressure, the climate distribution of heat, the humidity of the atmosphere, and its electric tension. Each of these heads will afford us room for a few remarks.

All those meteorological phœnomena whose period is diurnal may be studied, as he very justly observes, in their greatest simplicity, and therefore to the greatest advantage, between the tropics and especially under the equator. For this there are two reasons: first, that the sun's meridian altitude varies but little throughout the year; and secondly, that the equatorial zone is

symmetrically related to the two hemispheres. In particular the diurnal fluctuation of barometric pressure pursues a march so regular that we may infer the hour of the day from the height of the mercurial column, without an error, on the average, exceeding fifteen or seventeen minutes. 'In the torrid 'zone of the new continent,' he says, 'I have found the regu- 'larity of this ebb and flow of the aërial ocean undisturbed 'either by storm, tempest, rain, or earthquake, both on the 'coasts and at elevations of nearly 13,000 feet above the sea.' The total diurnal oscillation amounts, under the equator, to 0·117 in., diminishing gradually as the latitude increases. This fluctuation has usually been compared to the tides of the ocean, but has, in fact, no theoretical connexion with it. It is a compound phœnomenon arising from the superposition of two perfectly distinct diurnal oscillations, each going through its complete period in twenty-four hours; the one taking place in the aërial atmosphere, and arising from its alternate heating and cooling, which produce a flux and reflux over the point of observation; the other arising in the aqueous atmosphere by the alternate production and destruction of vapour by the heat of day and cold of night. The resolution of the hitherto puzzling part of this phœnomenon, viz. its double diurnal wave into two single ones, following different laws, and non-coincident in their phases, does honour to the sagacity of Dove, followed up as it has since been by the laborious researches of Colonel Sabine, to whose discussion of this point (note 382.) we particularly direct our readers' attention.

The gradual depression of the barometer in proceeding from tropical latitudes either way to the equator, was first noticed by M. de Humboldt himself. Its explanation is easy, viz. the continual efflux of heated air upwards from the equator towards the poles. Hence, by the effect of the earth's rotation on the currents setting in below to supply the void, arise the trade winds, and in the amount of this depression, which does not exceed two tenths of an inch, we have a measure of the motive power which originates these great currents. The connexion of the trades with the monsoons, and the varying winds of higher latitudes, is beautifully placed in evidence by the law of rotation of the wind lately discovered by Dove, a conclusion following so simply and naturally from the very same principle on which Hally originally explained the constant easterly direction of the trades (the difference of rotatory velocity on different terrestrial parallels), that it is only astonishing it should so long have escaped notice. As regards the local distribution of barometric pressure, the most extraordinary fact which has yet appeared in

meteorology is, perhaps, the general depression of the mercury to the enormous amount of an entire inch over the whole Antarctic Ocean, established by the late observations of Ross.

The chief elements of climate are heat and moisture; but it is neither on the extremes of heat or cold, moisture or dryness, experienced on rare occasions, that the character of a climate depends. Climatology is throughout a matter of averages, and is best studied and best understood by the graphical depiction of such averages, obtained by many years of careful observation according to a method proposed and carried out by M. de Humboldt himself, in 1807. In this system, all those points on the earth's surface which have equal mean annual temperatures are connected by a system of curves called *Isothermal;* those, again, in which the mean temperatures of the hottest summer months are alike, by another system of *Isothēral* curves; and those in which the mean winter temperatures agree, by a third, or *Isocheimōnal* system.

The law of distribution of heat over the surface of the globe, is best apprehended by the study of the first of these systems of curves, respecting which researches subsequent to those of M. de Humboldt have led to general and very remarkable conclusions. In the northern hemisphere only, are the forms of the Isothermal curves known with any degree of exactness. In this Sir D. Brewster places two points, or *poles of maximum cold,* on the 80th parallel of latitude, and in nearly opposite longitudes, (95° W. and 100° E.), of which the mean temperature is $3\frac{1}{2}°$ Fahr., and about which as foci the Isothermal lines form a system of spherical lemniscates, imitating in general form those beautiful curves exhibited by polarised light in biaxal crystals. The meridians of these poles pass almost diametrally through the main bodies of the American and Asiatic continents, while two other meridians nearly at right angles to them traverse the Polar sea, running out along the north Atlantic down the west coasts of Europe on the one hand, and nearly through Behring's Straits into the Pacific on the other. These then are the meridians respectively of greatest cold and warmth, and it is impossible not to recognise in them the effect of extensive tracts of land in high latitudes in increasing, and of sea in diminishing the intensity of cold as we approach the pole. Kämtz's projections confirm this result, so far as the general form of the isothermic ovals is concerned, but place their foci in rather lower latitudes, the one near Chatankoi in the Samoiede country, the other nearly upon Barrow's Strait. The succession of these lines followed along their intersections with the east coast of America, as compared with the west coast of that continent and

of Europe, places the mean climate of the whole of the former coast in striking and disadvantageous contrast with that of both the latter, and abundantly explains the early prevalent, though mistaken impression, of a general deficiency of genial warmth in the New World as compared with the Old.

The influence of great tracts of land remote from sea coasts, owing, doubtless, to the greater clearness of sky arising from the defect of moisture, tends to exaggerate both the summer heat and the winter cold, but the latter in a higher degree than the former. Accordingly we find the Isothēral curves in the interior of the great continents of the northern hemisphere affecting a greater convexity towards the north, and the Isocheimōnal less so as compared with the lines of mean temperature. The effect of this is to produce in those regions *extreme* or excessive climates in which violent summer heat is succeeded by intense winter cold. Of such, M. de Humboldt gives instances in Tobolsk, Barnaoul, and Irkutzk, in whose summers, for weeks together, the thermometer remains at 86° or 87° Fahr. while their winters exhibit the severe *mean* temperature of —0°·4 to +4°·0 of the same scale, or 40° lower than the mean winter temperature of London.

On the other hand, the proximity of the sea for many and obvious reasons tends to mitigate and equalise the fluctuations of temperature, and where this tendency, as on the west coast of Ireland and the south-west coast of England, conspires with a generally favourable position as regards the Isothermic curves, an approach to perpetual spring prevails. 'In the north-western 'part of Ireland, in lat. 54° 46′, under the same parallel with Ko-'nigsberg,' (where even our holly cannot survive,) 'the myrtle 'flourishes as luxuriantly as in Portugal.' The winter mean temperature of Dublin is actually 3°·6 higher than that of Milan.

The effect of such local peculiarities is, of course, strongly marked in vegetation, which M. de Humboldt exemplifies in the growth of the grape, and the production of *drinkable* wine. This condition, he observes, necessitates a mean summer temperature of at least 64°·4 Fahr., a mean annual temperature not below 49°·2, and a mean winter one above 32°·8. These conditions are all amply satisfied and exceeded along our southern coasts; so that it is clear that not merely drinkable, but respectable, wine might be grown there: and if, at very early periods of our history, we find that such was the practice, we may observe that, owing to the diminution of the obliquity of the ecliptic, we are placed, so far as summer temperature is concerned, in a *somewhat* less favourable situation than at the epoch of the Roman occupation. The difference amounts to

13′, by which the summer sun comes less northward than at the epoch alluded to.

'I have, in no part of the earth, not even in the Canary Islands, in Spain, or in the south of France, seen more magnificent fruit, especially grapes, than at Astrachan. With a mean annual temperature of 48°, the mean summer temperature rises to 70°·2, which is that of Bordeaux; while not only there, but still more to the south, at Kislar (in the latitude of Avignon and Rimini), the thermometer sometimes falls, in winter, to −13° or −22° Fahr.

Ascent into a higher region of the atmosphere has the same depressing effect on temperature with increase of latitude. The fact is universally known—the cause, perhaps, less familiarly so. Were there no atmosphere, a thermometer freely exposed (at sunset) to the heating influence of the earth's radiation, and the cooling power of its own into space, would indicate (if the dip of the horizon be neglected) a medium temperature between that of the celestial spaces (−132°) and that of the earth's surface below it (82° at the equator, $-3\frac{1}{2}°$ in the Polar Sea). Under the equator, then, it would stand, on the average, at −25°, and in the Polar Sea at −68°. The presence of the atmosphere tends to prevent the thermometer so exposed from attaining these extreme low temperatures; first, by imparting heat by conduction; secondly, by impeding radiation outwards. Both these causes are more effective in proportion to the density of the air in contact with the thermometer, which is, therefore, always maintained at a degree higher than those named, and approaching more nearly to the temperature of the soil, the lower the level of the station.

The habitual dryness of the upper regions of the atmosphere is another general fact, the causes of which are not usually neatly conceived. It is partly apparent, partly real. In proportion to the rarity of the air about any moist surface, evaporation is freer, the drying process goes on more rapidly, and superfluous moisture is more speedily exhaled. Mere facility of exhalation, however, is not to be construed as any proof of extreme deficiency of moisture in the air. On the other hand, however, such deficiency really and necessarily exists. If there were never any rain, snow, or dew, the aqueous atmosphere would be coextensive with the aërial one, and each stratum of the latter in a state of exact saturation. Every act of precipitation (no matter how produced) unsettles this state of things, and withdraws from the total mass of the air some portion of its entire amount of vapour. As such precipitations, therefore, are constantly going on in some place or other, the atmosphere, as a mass, though incumbent on a wet and evaporating surface, is

necessarily always deficient in moisture. And for the very same reason, every superior stratum is relatively deficient in comparison with that immediately beneath it, from which its supply is derived. In point of ultimate causation, there is a constant drain upon the aqueous contents of the atmosphere, arising from changes of temperature. This drain extends to all its strata; but while the lower renew their losses from a surface hygrometrically *wet*, the upper draw their supply intermediately from sources more and more deficient in moisture.

In intimate connexion with these general relations stands the striking and picturesque phœnomenon of perpetual snow on mountain summits, and the causes which determine the altitude of its inferior limit in different regions. The snow-line necessarily descends to the level of the sea, in latitudes where the mean temperature is beneath the freezing point, and rises, generally speaking, as we approach the equator, where, in South America, or Cotopaxi and Chimborazo, it attains a level not inferior to that of the *summit* of Mont Blanc. On the southern declivity of the Himalayas, in latitude 31°, its level may be stated at 13,000 feet, while yet, on their northern slopes, under the influence of radiation from the high lands of Thibet (11,500 feet in mean elevation) it attains a height of 16,600 feet. Such, indeed, is the influence of local circumstances, and especially of the extreme dryness which prevails aloft in the southern prolongation of the chain of the Andes, that in the western or maritime part of that chain, in lat. 18° S., the snow-line is found nearly 2700 feet higher than under the equator; and even so far as $32\frac{1}{2}°$ south, the volcano of Aconcagua, 1400 feet higher than Chimborazo, has, on one occasion, been seen *entirely free from snow, by the mere effect of evaporation*, being not at the time in a state of eruption. (Kosm. Tr., p. 329.)

According to the alternation of the seasons, the lower line of *actual* snow oscillates between limits more or less extensive, according to the difference of the summer and winter temperatures at the place; but besides this annual oscillation, successions, which appear to us casual, of cold, warm, dry, and wet seasons, winds, &c., give rise to fluctuations in the amount of accumulated snow, which manifest themselves in the slow alternate prolongation and recess of glaciers, a subject which M. de Humboldt passes over with slighter notice than we should have expected. The arduous and indefatigable researches of Professor Forbes, one of the greatest, if not the very greatest, of Alpine travellers since Saussure, and his ingenious theory of glacier motion, have heightened to an extraordinary degree the interest of this branch of terrestrial physics, and might, we

think, have secured his name a place beside those of Vernetz, Charpentier, and Agassiz, in the briefest possible mention of the subject.

The electricity of the atmosphere is a subject too inconsecutively studied, and too little understood, to admit of any distinct, general, and positive conclusions being drawn respecting it. We have ventured to hazard an opinion that the part it plays in phœnomena, properly called meteorological, is rather that of an effect than a cause; whatever influence its development may have on organic life in stimulating the nerves and promoting the circulation of the juices (both we apprehend, much overrated). Our limits, however, forbid us to assign the grounds for this opinion, and the mention of organic life reminds us that we have yet another field to traverse in M. de Humboldt's guidance. But here too we shall imitate his own brevity; confining himself as he does to the *general* influence of temperature and climate on the distribution of organic forms, to the physiognomy of different countries imparted by the greater or less predominance of those families of plants which are called 'social,' and to the similar influence of elevation above the sea and increase of latitude; and waiving, as it would seem designedly and of purpose, all mention of a subject the most prominent and the most interesting in natural history. We allude to the local distribution of genera and species, not as affected simply by diversity of climate and soil, but by locality *as such*, according to laws which almost seem to have had reference not so much to the mere fitness of this or that climate, &c., for this or that species, as to some more general object, such as that of superinducing the utmost possible diversity of organism and assemblages of organised beings on the face of material creation. This forbearance is the more disappointing, because it is precisely from M. de Humboldt himself that the first impulse of philosophical speculation and inquiry in this direction was given, and that there is, therefore, no one to whom we should more naturally look up for large and general views on the subject, or for satisfactory impressions as to the aspect in which the facts actually present themselves to those who alone are fully competent to judge of them. In stating these great facts, it is by no means necessary to go into questions of origin (which he very properly declines to do). There may or there may not have been local centers of creation, whence, in all geological epochs, species have spread themselves. But the matter of fact, the observed *laws of collocation*, strongly marked as they are, appear of paramount importance, and constitute the most salient features of the geography of plants and animals. 'Each hemisphere,' says

M. de Humboldt in his Personal Narrative, 'produces plants 'of different species; and it is not by the diversity of climates 'that we can attempt to explain why equinoctial Africa has no 'Laurineæ and the New World no heaths; why the Calceolariæ 'are found only in the southern hemisphere; why the birds of 'the continent of India glow with less splendid colours than 'those in the hot parts of America; finally, why the Tiger is 'peculiar to Asia, and the Ornithorhyncus to New Holland.'

The total diversity of all the plants and animals of New Holland from those of all other countries; the complete separation of the Old from the New World in their representation of natural families, not only in their living, but in many of their fossil productions, is part only of a general system of regional repartition which pervades the whole scheme of organic life: a *fact* of the first magnitude, whatever be the speculative aspect in which it may be regarded.

Man, 'subject in a less degree than plants or animals to the 'circumstances of soil and to meteorological conditions, and 'escaping from the control of natural influences by the activity 'of mind and the progressive advancement of intelligence,' forms every where an essential part of the life which animates the globe. In considering the great questions which ethnology presents, M. de Humboldt avows his conviction of the superior weight attributable to those arguments which support, over those which combat a community of origin and a gradual branching forth into established varieties or races. He observes, however, that,

'As in the vegetable kingdom and in the natural history of birds and fishes, an arrangement into many small families proceeds on surer grounds than one which unites them into a few sections embracing large masses; so also, in the determination of races, it appears preferable to establish smaller families of nations. In the opposite mode of proceeding, whether we adopt the old classification of Blumenbach into *five* races, . . . or that of Prichard into *seven* . . . it is impossible to recognise in the groups thus formed any true typical distinction—any general and consistent natural principle. The extremes of form and colour are separated indeed, but without regard to nations which cannot be made to arrange themselves under any of the above-named classes.'

Language is the main clue we have to guide us through the labyrinths of ethnology; but it is one which must be followed with caution, and with all the light which history can throw upon its application.

'Subjection to a foreign yoke, long association, the influence of a foreign religion, a mixture of races, even when comprising only a

small number of the more powerful and the more civilised immigrating race, have produced in both continents similarly recurring phœnomena; viz. in one and the same race two or more entirely different families of languages; and in nations differing widely in origin, idioms belonging to the same linguistic stock.'

Where history fails, however, as is the case with the barbarous nations of the New World, and those, which in other regions are fast disappearing before European encroachments, language, physical resemblance, and similarity of customs (when not traceable to general principles of human nature) are all the guides which are left to us in tracing the affiliation of races. That aiding and warning light withdrawn, it behoves us to be all the more scrupulously careful in collecting and preserving unimpaired and undistorted whatever vestiges of human language still subsist. And here we must enter our protest, we fear an unavailing one, against the supineness which suffers those invaluable monuments, the unwritten languages of the earth, to perish with a rapidity yearly increasing, without one rational and well concerted effort to save them in the only mode in which it can be done effectually, viz. by reducing them to writing *according to their exact native pronunciation* through the medium of a thoroughly well considered and digested Phonetic alphabet. About sixty well chosen, easily written, and *unequivocal* characters, completely exemplified in their use by passages from good writers in the principal European and eastern languages, would satisfy every want, without going into impracticable niceties; and we earnestly recommend the construction and promulgation of a manual of this kind for the use of travellers, voyagers, and colonists, as a matter of pressing urgency, to the consideration of philologists, ethnologists, and geographers, in their respective societies assembled.*

* Many attempts at the construction of such alphabets have been made, but none at all satisfactory. That of Young (Lectures, ii. 276.) is perhaps the most complete in its analysis of speech, though still defective, and in some points erroneous — his system of characters wretched. Gilchrist's is perhaps the best known, and in profession nothing short of absolute universality, but its author (a Scotsman) was altogether defective in *ear*, and his examples in consequence self-contradictory — his system of writing confusion itself. The *Fonotipik kariktur*, devised by the ingenious Mr. PitmUn and his associates for the speedy and effectual abrogation of the English language, would have considerable merit were it not founded on an essentially English instead of a cosmopolitan view of the vowel sounds as represented by European letters, and therefore sure to be rejected by every foreign philologist. Yet even this, enlarged to suit the

We have been so intent on the subject matter of the work before us, as to have left little space for comment on the mode of its presentation to the English reader. The author has been especially fortunate in his translator (translatress we should rather say, since, in the style of its execution, we have no difficulty in recognising the same admirable hand which gave an English garb to Baron Wrangell's Expedition to the Polar Sea.) So perfect a transfusion of the spirit and force of a very difficult original into another language, with so little the air of a translation, it has rarely been our fortune to meet with. To the editor it is indebted for several very interesting and instructive notes (to some of which we have had occasion specifically to draw the reader's attention) relating to a variety of subjects, on which, either from personal observation on the most extended scale, or from laborious and systematic discussion of the observations of others, he is entitled to every attention.

While the preceding pages were in progress, we have been favoured with the perusal, in proof sheets, of a portion of the second volume of the 'Kosmos,' (translated and edited as above,) containing, under the title of 'Incitements to the Study of 'Nature,' a series of beautiful and brilliant essays of the highest literary merit, and full of scholarship, classical research, and artistic feeling, on the reflex action of the imaginative faculty when excited by the contemplation of the external world, as exemplified in the production of poetic descriptions of nature (especially of wild and landscape scenery), and in landscape painting. For examples of the former kind, M. de Humboldt lays under contribution the literature of all ages and nations, from ancient India to modern Europe, entering largely into the influence exercised by the peculiar aspect of society in each on the development of this form of the poetic sentiment, which he regards, and justly, as the first expansion of the heart towards a recognition of the unity and grandeur of the Kosmos. In like manner the art of landscape painting is traced from its first origin as the mere background of historical composition or scenic decoration, to its grand developments in the seventeenth century—to 'Claude Lorraine, the idyllic painter of light and aërial dis-'tance, Ruysdael's dark forest masses and threatening clouds

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exigencies of the case, would be preferable for temporary use to the present no-system in which each traveller in his diary, and each missionary, in formal grammar and dictionary, confounds and for ever mars, as seems good in his own eyes, the pronunciation he pretends to fix.

'Gaspar and Nicholas Poussin's heroic forms of trees, and the 'faithful and simply natural representations of Everdingen, 'Hobbima, and Cuyp.' The gradual emancipation of the art from its trammels, as a subordinate auxiliary, and its assumption of an ideal of its own embodying, are shown to be ever found in connexion with increasing knowledge and observation of nature consequent on advancing cultivation. To such poetic descriptions and depicted scenery, as well as to the view of exotic products assembled in collections, hot-houses, and museums, he traces much of that lively impulse which stimulates young and excitable minds to foreign travel for the sake of knowledge, and to the prosecution of physical study at home. These essays form a graceful and elegant episode, interposed between the more massive and austere divisions of the general subject, the 'Physical Description of the Universe,' which we have passed in review, and the 'History of the Contemplation of Nature'; and will be read with equal enjoyment by the poet, the artist, and the philosopher.

Of the 'History of the Contemplation of Nature' one section only has reached our hands: sufficient, however, to convey a notion, and to correct an impression we had formed, as to our author's intended mode of handling this part of his matter. The history with which he proposes to present us would appear to be not so much a history of Physical Science in the gradual development of its theories, as *a history of objective discovery*, a review of those steps in the progress of human cultivation which have prepared the way and furnished the materials for science such as we now possess it. With every successive expansion of society the views of mankind have become enlarged as to the extent and construction of the globe we inhabit, the objects it offers to contemplation, the elaborate structure of its parts, and its relation to the rest of the universe. Great events in the world's history have from time to time especially facilitated and promoted this enlargement of the horizon of observation; such as the migrations of nations, remarkable voyages, and military expeditions, bringing into view new countries, new products, new relations of climate. Great epochs too in the history of the knowledge of nature are those in which accident or thought has furnished artificial aids, new organs of sense and perception, by which man has been enabled to penetrate more and more deeply either into the profundity of space, or into the intimate constitution of the animate and inanimate objects which surround him. In tracing these epochs and following out the course of these events so far as they bear upon the object in view, availing himself of all the light which modern research has thrown

on the early history of civilisation, whether from the study of ancient monuments, or the critical comparison of written records, M. de Humboldt has opened out for himself a field nearly coextensive with literature itself, and one peculiarly fitted to his own powers and habits of thought, which, as our readers need not to be informed, have made its higher walks — Æsthetics, History, and Antiquarian and Monumental Lore — quite as familiar to him as those of Science. We should do injustice, however, both to him and to those whose office it may be to render an account of the further progress of this work, by further anticipation, and shall, therefore, content ourselves with adding that, should the conclusion correspond (as we doubt not) with these beginnings, a work will have been accomplished, every way worthy of its author's fame, and a crowning laurel added to that wreath with which Europe will always delight to surround the name of Alexander von Humboldt.

ART. VI. — 1. *Correspondence explanatory of the Measures adopted by her Majesty's Government for the Relief of Distress arising from the Failure of the Potato Crop in Ireland.*

2. *Commissariat and Board of Works Series, from November* 1845 *to August* 1846.

3. *Commissariat Series, from July* 1846 *to January* 1847, *and from January* 1847 *to March* 1847.

4. *Board of Works Series, from July* 1846 *to January* 1847, *and from January* 1847 *to March* 1847.

5. *Fisheries Series, from July* 1846 *to January* 1847.

6. *Correspondence relating to the State of the Union Workhouses in Ireland, from October* 1846 *to January* 1847, *and from January* 1847 *to February* 1847.

THE time has not yet arrived at which any man can with confidence say, that he fully appreciates the nature and the bearings of that great event which will long be inseparably associated with the year just departed. Yet we think that we may render some service to the public by attempting thus early to review, with the calm temper of a future generation, the history of the great Irish famine of 1847.* Unless we are

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* We have endeavoured to gather up all the threads of this strange tissue, so that every circumstance of importance connected with the measures of relief may be placed on record; but our narrative does

much deceived, posterity will trace up to that famine the commencement of a salutary revolution in the habits of a nation long singularly unfortunate, and will acknowledge that on this, as on many other occasions, Supreme Wisdom has educed permanent good out of transient evil.

If, a few months ago, an enlightened man had been asked what he thought the most discouraging circumstance in the state of Ireland, we do not imagine that he would have pitched upon Absenteeism, or Protestant bigotry, or Roman Catholic bigotry, or Orangeism, or Ribbandism, or the Repeal cry, or even the system of threatening notices and midday assassinations. These things, he would have said, are evils; but some of them are curable; and others are merely symptomatic. They do not make the case desperate. But what hope is there for a nation which lives on potatoes?

The consequences of depending upon the potato as the principal article of popular food, had long been foreseen by thinking persons; and the following observations extracted from a paper on the native country of the wild potato*, published in the Transactions of the Horticultural Society of London for the year 1822, are a fair specimen of the opinions which prevailed on the subject previously to the great failure of 1845.

'The increased growth of the potato, not only in these kingdoms, but almost in every civilised part of the globe, has so added to its importance, that any information respecting it has become valuable. With the exception of wheat and rice, it is now certainly the vegetable most employed as the food of man; and it is probable that the period is at no great distance when its extensive use will even place it before those which have hitherto been considered the chief staples of life. The effect of the unlimited extent to which its cultivation may be carried, on the human race, must be a subject of deep interest to the political economist. The extension of population will be as unbounded as the production of food, which is capable of being produced in very small space, and with great facility; and the increased number of inhabitants of the earth will necessarily induce changes, not only in the political systems, but in all the artificial relations of civilised life. How far such changes may conduce to or increase the happiness of mankind, is very problematical, more especially when it is considered, that since the potato, when in cultivation, is very liable to injury from casualties of season, and that it is not at present known how to keep it in store for use beyond a few months, a general failure of the year's

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not, except in a few instances, extend beyond September 1847, and the progress of events after that date will form the subject of a separate article.

* The author of this paper was the late Mr. Joseph Sabine, the Secretary to the Horticultural Society.

crop, whenever it shall have become the chief or sole support of a country, must inevitably lead to all the misery of famine, more dreadful in proportion to the numbers exposed to its ravages.'

The important influence which has been exercised by this root over the destinies of the human race, arises from the fact that it yields an unusually abundant produce as compared with the extent of ground cultivated, and with the labour, capital, and skill bestowed upon its cultivation. The same land, which when laid down to corn, will maintain a given number of persons, will support three times that number when used for raising potatoes. 'A family in the West of Ireland, once located on 'from one to three or four acres of land, was provided for; a 'cabin could be raised in a few days without the expense of a 'sixpence; the potatoes, at the cost of a very little labour, sup-'plied them with a sufficiency of food, with which, from habit, 'they were perfectly content; and a pig, or with some a cow, or 'donkey, or pony, and occasional labour at a very low rate of 'wages, gave them what was necessary to pay a rent, and for 'such clothing and other articles as were absolutely necessary, 'and which, with a great proportion, were on the lowest scale of 'human existence. The foundation of the whole, however, was 'the possession of the bit of land; it was the one, and the only 'one thing absolutely necessary; the rent consequently was high, 'and generally well paid, being the first demand on all money 'received, in order to secure that essential tenure; and only what 'remained became applicable to other objects. Although of the 'lowest grade, it was an easy mode of subsistence, and led to the 'encouragement of early marriages, large families, and a rapidly-'increasing population, and at the same time afforded the pro-'prietor very good return of profit for his land.'*

The relations of employer and employed, which knit together the framework of society, and establish a mutual dependence and good-will, have no existence in the potato system. The Irish small holder lives in a state of isolation, the type of which is to be sought for in the islands of the South Sea, rather than in the great civilised communities of the ancient world. A fortnight for planting, a week or ten days for digging, and another fortnight for turf-cutting, suffice for his subsistence; and during the rest of the year he is at leisure to follow his own inclinations, without even the safeguard of those intellectual tastes and legitimate objects of ambition which only imperfectly obviate the evils of leisure in the higher ranks of society. The excessive

* Sir John Burgoyne's letter to the 'Times,' dated 6th October, 1847.

competition for land maintained rents at a level which left the Irish peasant the bare means of subsistence; and poverty, discontent, and idleness, acting on his excitable nature, produced that state of popular feeling which furnishes the material for every description of illegal association and misdirected political agitation. That agrarian code which is at perpetual war with the laws of God and man, is more especially the offspring of this state of society, the primary object being to secure the possession of the plots of land, which, in the absence of wages, are the sole means of subsistence.

There is a gradation even in potatoes. Those generally used by the people of Ireland were of the coarsest and most prolific kind, called 'Lumpers,' or 'Horse Potatoes,' from their size, and they were, for the most part, cultivated, not in furrows, but in the slovenly mode popularly known as 'lazy beds;' so that the principle of seeking the cheapest description of food at the smallest expense of labour, was maintained in all its force. To the universal dependence on the potato, and to the absence of farmers of a superior class, it was owing that agriculture of every description was carried on in a negligent, imperfect manner.* The domestic habits arising out of this mode of subsistence were of the lowest and most degrading kind. The pigs and poultry, which share the food of the peasant's family, became, in course, inmates of the cabin also.

* The following description of the state of agriculture in West Clare, previously to the failure in the potato crop in 1845, is taken from a narrative by Captain Mann of the Royal Navy, who had for some time previously been stationed in that district, in charge of the Coast Guard; and when the distress commenced, he took an active and very useful part in assisting in the measures of relief. 'Agricul-
'ture at that period was in a very neglected state; wheat, barley, and
'oats, with potatoes as the food of the poor, being the produce. Of the
'first very little was produced, and that not good in quality; barley, a
'larger proportion and good: oats, much greater, but inferior for
'milling purposes. Various reasons were given for this inferiority in
'produce, the quality of the land and deteriorated seed being the
'cause generally assigned; but I would say that the population being
'content with, and relying on the produce of the potato as food —
'which had, with very few exceptions, hitherto proved abundant —
'there was a general neglect and want of any attempt at improvement.
'Green crops were all but unknown, except here and there a little
'turnip or mangel wurzel in the garden or field of the better class, —
'the former scarcely to be purchased. Even the potatoes were tilled
'in the easiest way, in beds (called "lazy beds"), not in drills, so that
'the hoe might in a very short time clear the weeds and lighten the
'soil.'

The habit of exclusively living on this root produced an entire ignorance of every other food, and of the means of preparing it; and there is scarcely a woman of the peasant class in the West of Ireland, whose culinary art exceeds the boiling of a potato. Bread is scarcely ever seen, and an oven is unknown.

The first step to improvement was wanting to this state of things. The people had no incitement to be industrious, to procure comforts which were utterly beyond their reach, and which many of them perhaps had never seen. Their ordinary food being of the cheapest and commonest description, and having no value in the market, it gave them no command of butcher's meat, manufactures, colonial produce, or any other article of comfort or enjoyment. To those who subsist chiefly on corn, other articles of equal value are available, which can be substituted for it at their discretion; or if they please, they can, by the adoption of a less expensive diet, accumulate a small capital by which their future condition may be improved and secured; but the only hope for those who lived upon potatoes was in some great intervention of Providence to bring back the potato to its original use and intention as an adjunct, and not as a principal article of national food; and by compelling the people of Ireland to recur to other more nutritious means of aliment, to restore the energy and the vast industrial capabilities of that country.

A population, whose ordinary food is wheat and beef, and whose ordinary drink is porter and ale, can retrench in periods of scarcity, and resort to cheaper kinds of food, such as barley, oats, rice, and potatoes. But those who are habitually and entirely fed on potatoes, live upon the extreme verge of human subsistence, and when they are deprived of their accustomed food, there is nothing cheaper to which they can resort. They have already reached the lowest point in the descending scale, and there is nothing beyond but starvation or beggary. Several circumstances aggravate the hazard of this position. The produce of the potato is more precarious than that of wheat or any other grain. Besides many other proofs of the uncertainty of this crop, there is no instance on record of any such failure of the crops of corn, as occurred in the case of potatoes in 1822, 1831, 1845, 1846, and 1847, showing that this root can no longer be depended upon as a staple article of human food. The potato cannot be stored, so that the scarcity of one year may be alleviated by bringing forward the reserves of former years, as is always done in corn-feeding countries. Every year is thus left to provide subsistence for itself. When the crop is luxuriant, the surplus must be given to the pigs; and when it is deficient,

famine and disease necessarily prevail. Lastly, the bulk of potatoes is such, that they can with difficulty be conveyed from place to place to supply local deficiencies, and it has often happened that severe scarcity has prevailed in districts, within fifty miles of which potatoes were to be had in abundance. If a man use two pounds of meal a-day (which is twice the amount of the ration found to be sufficient during the late relief operations), a hundred weight of meal will last him for fifty-six days, whereas a hundred weight of potatoes will not last more than eight days; and when it was proposed to provide seed-potatoes for those who had lost their stock in the scarcity of 1846, the plan was found impracticable, because nearly a ton an acre would have been required for the purpose.

The potato does not, in fact, last even a single year. The old crop becomes unfit for use in July, and the new crop, as raised by the inferior husbandry of the poor, does not come into consumption until September. Hence, July and August are called the 'meal months,' from the necessity the people are under of living upon meal at that period. This is always a season of great distress and trial for the poorer peasants; and in the districts in which the potato system has been carried to the greatest extent, as, for instance, in the barony of Erris in the county of Mayo, there has been an annual dearth for many years past. Every now and then a 'meal year' occurs, and then masses of the population become a prey to famine and fever, except so far as they may be relieved by charity.

In 1739 an early and severe frost destroyed the potatoes in the ground, and the helplessness and despair of the people having led to a great falling off of tillage in 1740, the calamity was prolonged to the ensuing year, 1741, which was long known as the *bliadhain an air*, or year of slaughter. The ordinary burial-grounds were not large enough to contain those who died by the road side, or who were taken from the deserted cabins. The 'bloody flux' and 'malignant fever,' having begun among the poor, spread to the rich, and numerous individuals occupying prominent positions in society, including one of the judges (Mr. Baron Wainwright), and the Mayor of Limerick (Joseph Roche, Esq.) and many others of the corporation, fell victims. Measures were adopted at Dublin on the principle of the English Poor Law, some of the most essential provisions of which appear to have been well understood in the great towns of Ireland in that day; and it was 'hoped, 'since such provision is made for the poor, the inhabitants of 'the city will discourage all vagrant beggars, and give their 'assistance that they may be sent to Bridewell to hard labour,

'and thereby free themselves from a set of idlers, who are a 'scandal and a reproach to the nation.' Soup kitchens and other modes of relief were established in different parts of the country, in which Primate Boulter and the Society of Friends took the lead, and numerous cargoes of corn were received from America, the arrival of which had been looked for with great anxiety. In only one point is there any decided difference between what then took place in Ireland and the painful events which have just occurred, after the lapse of upwards of a century. The famine of 1741 was not regarded with any active interest either in England or in any foreign country, and the subject is scarcely alluded to in the literature of the period. No measures were adopted either by the Executive or the Legislature for the purpose of relieving the distress caused by this famine. There is no mention of grants or loans; but an Act was passed by the Irish Parliament in 1741 (15 Geo. 2. cap. 8.), 'For the more 'effectual securing the Payment of Rents, and preventing Frauds 'by Tenants.'*

The failure of 1822, in the provinces of Munster and Connaught, was owing to a continued and excessive humidity, which caused the potatoes to rot after they had been stored in the pits, so that the deficiency of food was not discovered till late in the season. On the 7th May, 1822, a public meeting was held in London, which was attended by the Archbishop of Canterbury, and the most eminent persons of the day, when a committee of no less than 109 of the nobility and gentry was formed, and a subscription was entered into, amounting, with the aid of a king's letter, to 311,081*l.* 5*s.* 7*d.*, of which 44,177*l.* 9*s.* was raised in Ireland. Many excellent principles were laid down for the distribution of this large sum; and after reserving what was required for immediate relief, the balance, amounting to 87,667*l.*, was granted to various societies which had been established for the future and permanent benefit of the Irish peasantry.† A Committee also sat at the Mansion House at Dublin, which collected 31,260*l.* from various quarters, independently of the grants it received from the London Committee. Central Committees were established in each county town in the distressed districts, and Sub-Committees in each parish. The western portion of

* We are indebted for these particulars to Mr. M'Cullagh, who has lately collected the contemporary accounts of this famine. It appears that the farmers at this period did not dig their potatoes until about Christmas, and that few stored them at all for use.

† An interesting account by Mr. Bertolacci, of the manner in which this fund and the fund collected in 1831 were distributed, will be found in the 'Morning Chronicle' of the 25th November, 1847.

Ireland was also divided into three districts, to each of which a civil engineer was appointed for the purpose of employing the destitute in making roads, and the following sums were voted by Parliament for carrying on these and other Public Works set on foot with the same object of relieving the distress.*

On the 24th June, 1822, 100,000*l.*,
'for the employment of the poor in Ireland and other purposes relating thereto, as the exigency of affairs may require.'

On the 23d July, 1822, 200,000*l.*
'to enable his Majesty to take such measures as the exigency of affairs may require.'

And on the 24th June, 1823, 15,000*l.* was voted,
'to facilitate emigration from the south of Ireland to the Cape of Good Hope.'

In 1831 another failure of the potato crop occurred in the counties of Galway, Mayo, and Donegal, upon which another meeting was held in the city of London, and one committee was established at the Mansion House, and another at the West End. Great exertions were made to raise subscriptions; a bazaar was held at the Hanover Square Rooms by many of the ladies of the nobility, presided over by the Queen in person; and there was a ball at Drury Lane Theatre, which was honoured by the presence of the King and Queen. The whole amount collected was 74,410*l.*; and besides this 40,000*l.* was granted by Parliament, part of which was expended on relief works, and part in the actual distribution of food. Besides these London Committees, two other Committees were formed at Dublin, through one of which (the Mansion House Committee†) 8569*l.* was

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* For the details of these operations see the following parliamentary papers:—

'Copies of the Reports of Messrs. Griffith, Nimmo, and Killaly, the civil engineers employed during the late scarcity in superintending the Public Works in Ireland; 16th April, 1823 (249).'

'Report from the Select Committee of the House of Commons on the employment of the poor in Ireland; 16th July, 1823 (561).'

It is a remarkable testimony to the improvement effected by such works in the social habits of the people, that the district situated between the Shannon and Blackwater, which was opened in four directions by the roads executed by Mr. Griffith, although formerly the seat of the Desmond rebellion, and subsequently, in the year 1821, the asylum for Whiteboys, and the focus of the Whiteboy warfare, at which period four regiments were required to repress outrage, became perfectly tranquil, and continued so up to the commencement of the late calamity.

† The following remarkable passage is extracted from the Report

collected, and through the other (the Sackville Street Committee) 21,526*l.*

In each of the years 1835, 1836, and 1837, the potato crop failed in one or other of the districts in the West of Ireland, and sums amounting in the aggregate to 7572*l.* were expended from Civil Contingencies in relieving the distress thereby occasioned, to which was added the sum of 4306*l.* remaining from the English and Irish subscriptions of 1831.

In 1839 another failure occurred; and in all the Western and Midland Counties, the average price of potatoes in July and August was 7*d.* a stone, and of oatmeal 18*s.* or 19*s.* a cwt.; the former double, and the latter one-third more than the usual price at that time of the year. On this occasion Captain Chads, R. N., was deputed by the Government to assist the landlords in employing the destitute in constructing roads and other useful public works; and it appears from a report addressed by him to the Chancellor of the Exchequer, dated the 22d of August, 1839, that 5441*l.* was expended in this way, of which 1840*l.* was contributed by the Government. Towards the conclusion of his report Captain Chads made the following remarks:—'A recurrence of these seasons of distress,

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of the Dublin Mansion House Committee, dated the 22d October, 1831:—

'But while the Mansion House Committee thus congratulate themselves and the subscribers upon the success of their efforts to avert famine and disease for a season from so considerable a portion of the island, they owe it also to themselves and the subscribers to avow their honest conviction that similar calls will be periodically made on public benevolence, unless a total change be effected in the condition of the Irish peasant. What means should be adopted to remedy these evils it is not the province of this Committee to suggest; but they deem it their duty to call the attention of the subscribers particularly to this state of things, in the hope of some remedy being discovered and applied before public benevolence is quite exhausted by repeated drains on its sympathy.'

On the 21st May, 1838, the Duke of Wellington made the following observations in the debate on the introduction of the Irish Poor Law:—'There never was a country in which poverty existed to so 'great a degree as it exists in Ireland. I held a high situation in that 'country thirty years ago, and I must say that from that time to this 'there has scarcely elapsed a single year in which the Government has 'not at certain periods of it entertained the most serious apprehension 'of actual famine. I am firmly convinced that from the year 1806, 'down to the present time, a year has not passed in which the Govern-'ment have not been called on to give assistance to relieve the poverty 'and distress which prevailed in Ireland.'

'which have been almost periodical hitherto, must, I fear, be 'necessarily expected, so long as the present condition of the 'poor continues, and whilst they subsist on that species of food, 'which in a year of plenty cannot be stored up for the next, 'which may be one of scarcity. A very great alleviation, how-'ever, of this evil is most confidently expected from the Poor 'Law now establishing. I have conversed on this subject with 'persons of every class of society, from one end of the country 'to the other, and it is universally regarded as the promise of a 'great blessing:—to the poor, by inducing more provident and 'industrious habits; and by making it the interest of the land-'lords to give them employment; and to all other classes, 'comfort and contentment, from the knowledge that the really 'distressed are provided for, and that the country is generally 'improving by the extension of employment.'

After this, urgent representations of distress were made in each year to the Irish Government and to the Poor Law Commissioners, until the summer of 1842, which was more than usually wet and unfavourable to vegetation, and it therefore again became necessary to have recourse to extensive measures of relief. Mr. Burke, the Assistant Poor Law Commissioner, was employed on this duty; and 3448*l.* was distributed by him, in aid of local subscriptions, in 121 separate districts; the aggregate sums raised in each case being expended, partly in public works on Captain Chads' plan, and partly in giving gratuitous relief.*

Other causes concurred with the natural tendency of every people to have recourse to the cheapest description of food, in encouraging the growth of a large population depending for its subsistence on the potato. Ireland was essentially a grazing country until the artificial enhancement of prices caused by the Acts of the Irish Parliament passed in 1783 and 1784, for granting a bounty on the exportation, and restricting the importation of corn, occasioned an immediate and extraordinary increase of cultivation; and as, owing to the general want of capital, it was impossible to find tenants for large tillage farms, the stimulus intended to act exclusively on agriculture had a still more powerful effect in causing the subdivision of farms. The new

* The particulars of what took place on this occasion will be found in a letter from the Poor Law Commissioners to Sir J. Graham, dated the 9th June, 1842, and in a statement dated 18th August, 1842, prepared under the directions of the Irish Government, showing 'the 'sums issued for the relief of distress in Ireland from the 17th June 'to the 17th August, 1842,' &c.

occupiers also, being for the most part exceedingly poor, instead of paying their labourers in money, allowed them the use of small pieces of ground whereon they might erect cabins and raise potatoes, and their labour was set off, at so much a day, against the annual rent. The plan of dividing and subdividing for the purpose of making freeholders was carried to a great extent after 1792, when the elective franchise was restored to the Roman Catholics; and although the practice was far from being general, yet in some parts of the country, where particular families made it their object to contest or secure the county, it was carried to a very pernicious extent. Another powerful cause is, that the emoluments of the Roman Catholic priesthood, including the bishops, depend not only on the extent of the population, but also on its continued increase; and if the parish priests object to emigration and the consolidation of small holdings, and look with favour on early marriages, it is only what any other body of men, in their circumstances, would equally do. Lastly, the small holding and potato system offered the inducement of large rents, obtained at the smallest possible amount of cost and trouble. The embarrassed and improvident landlord, and the leaseholder whose only object it was to make the most of his short tenure, equally found their account in this state of things, and the result in both cases was that the farms were covered with hovels and miserable cottiers, in order, through them, to create profit-rents. When the failure of the potato forced all the 'squatters' and 'mock tenants' into notice, the owner of many a neglected estate was surprised by the apparition of hundreds of miserable beings, who had grown up on his property without his knowledge, and now claimed the means of support at his hands. The subsistence of the tenant was at the minimum; the rent was at the maximum; and the interval between the ignorant excitable peasantry and the proprietor in chief, was filled only by the middleman, whose business it was to exact rents, and not to employ labourers. The base and the capital of the column were there, but the shaft was almost entirely wanting.

The extent to which the welfare of the agricultural population, and, through them, of the rest of the community, is affected by the conditions under which landed property is held, has become fearfully apparent during the present social crisis. The dependence for good and evil of workman on master manufacturer, of subject on Government, of child on father, is less absolute than that of the Irish peasant upon the lord of the soil from which he derives his subsistence. This is a subject to which, if we would save ourselves and our country, it behoves

us to give our most earnest and careful attention at the present time. We cannot give landed proprietors the will and disposition (where it is wanting) to fulfil the important part they have to perform in the scheme of society, but we have it in our power to strike off the fetters which at present impede every step of their progress in the performance of the duty they owe to themselves and to those dependent on them.

One half of the surface of Ireland is said to be let off in perpetuity leases, with derivative and subderivative interests in an endless chain, so as to obtain profit-rents at each stage; and these leases are often open to the additional objection that they are unnecessarily burdensome or uncertain from the particular mode in which they are made; such as 'leases for lives renewable for ever by the insertion of other lives when the first-named are dead,' 'for three lives *or* thirty-one years,' and 'for three lives *and* thirty-one years.' Many proposals have at different times been made for the redemption of these various interests; but an arbitrary interference with the rights of property is to be avoided, and our object should rather be to give every prudent facility for the voluntary transfer of land and of the various interests connected with it, which must lead, by a safe but certain gradation, to that degree of improvement of the existing tenures which is necessary for the encouragement of agriculture. In Mayo and other western counties the old barbarous Irish tenure called *Rundale* (Scotch *runrigg*) still prevails, which stops short of the institution of individual property, and by making the industrious and thriving responsible for the short-comings of the idle and improvident, effectually destroys the spring of all improvement. The cessation of this antiquated system is an indispensable preliminary to any progress being made in the localities where it exists; and this improvement may be effected by the landlords without any change in the law.

The master evil of the agricultural system of Ireland, however, is the law of Entail, and the Incumbrances which seldom fail to accumulate upon entailed estates. 'Proprietors of estates,' observes the author of an excellent pamphlet which has recently appeared on this subject*, 'are too often but mere nominal owners, without influence or power over the persons holding under them. 'Their real condition is often pitiable, nor is it possible, in the 'great majority of cases, to retrieve the estates. The burden 'of debt, or the evils of improvident leases, are fastened upon the

* Observations upon certain Evils arising out of the present state of the laws of Real Property in Ireland, and Suggestions for remedying the same. — Dublin: Alex. Thom. 1847.

'land in such a manner as to convert the owner into a mere 'annuitant, often glad to obtain from a good estate a scanty 'annuity (after payment of the incumbrances thereon and the 'public burdens) for his own subsistence. Proprietor and 'tenant are equally powerless for good; and the whole kingdom 'suffers from the disorders which have resulted from this state 'of real property in Ireland.' And the author of another valuable publication on the same subject* observes as follows: 'The evils resulting from settlements and entails may be regarded 'as arising from insecurity or uncertainty of tenure; because 'the possessor of the property is not in reality the owner; he 'cannot deal with it as an owner; he is merely a trustee for 'others; he has no interest in its future thorough permanent 'improvement, except so far as he may wish to benefit his suc-'cessors; he can never reap the benefit himself; he cannot sell; 'he cannot dispose of a part, even though the alienation of a 'part might greatly enhance the value of the remainder; he holds 'it during his lifetime, as his predecessor held it, unaltered, 'unimproved, to transmit it to his heir clogged with the same 'restrictions, alike injurious to him and to his country. This is 'the case of an unembarrassed landlord.† But let us suppose,

* Observations on the Evils resulting to Ireland from the Insecurity of Title and the existing Laws of Real Property, with some Suggestions towards a Remedy. — Dublin: Hodges and Smith. London: Ridgway. 1847.

† It is perfectly true that the unembarrassed holder of an entailed estate is often not sufficiently owner of it to be able to do justice to it. He cannot sell a portion to improve the remainder, however much both the part sold and the part retained would be benefited by it. He can burden the estate to provide for younger children's portions, but not to carry on improvements which would increase its annual produce. Improvements are generally made out of capital, and not out of income. Owners of entailed estates, for the most part, live up to their means; and when they do not, their savings are seldom sufficient to carry on works of any importance. Over the capital sum representing the aggregate value of the estate, they have no command, except for purposes which make them poorer, and consequently still less able to execute any useful design. At the present crisis of our national affairs, it behoves us to consider what course will be the best both for the landowners and for the community at large. There is a fearful surplus population in Ireland and the north-western part of Scotland which must be provided for; while in England itself thousands of railway labourers and Irish paupers roam unemployed about the country; and the question is, whether by removing the obstacles which at present oppose the profitable employment of the enormous capital invested in land, we might not obtain new resources which

'as is unfortunately too often the case, that he has received the 'estate incumbered under a settlement, with a jointure to the 'widow of the late possessor, and a provision for daughters and 'younger sons. In what difficulties is he at once involved! this 'owner for life of a large tract of country with a long rent-roll, 'but in fact a small property! He cannot maintain his position 'in society without spending more than his income; debts accu-'mulate; he mortgages his estate, and insures his life for the 'security of the mortgagee. Of course he cannot afford to lay 'out any thing on improvements; on the contrary, though per-'haps naturally kind-hearted and just, his necessities force him 'to resort to every means of increasing his present rental. He 'looks for the utmost amount; he lets to the highest bidder, 'without regard to character or means of payment. If his 'tenants are without leases, he raises their rents. If leases fall 'in, he cannot afford to give the preference to the last occupier. 'Perhaps with all his exertions he is unable to pay the interest 'or put off his creditors. Proceedings are commenced against 'him, and the estate passes during his lifetime under the care of 'the worst possible landlord, a receiver under the Court of 'Chancery.'*

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would enrich the owners of land, diffuse comfort and enjoyment in each locality, and help to provide for the unemployed population which is sitting like an incubus upon all the three kingdoms.

* The following table gives the leading particulars relating to the estates under the management of the courts in Ireland during the years 1841, 1842, and 1843: —

Court of Chancery.

	Number of Causes.	Rental of Estates.			Arrears of Rent. When Receiver was appointed.			Arrears of Rent. When Receiver last accounted.		
		£	s.	d.	£	s.	d.	£	s.	d.
1841	698	598,635	13	10¾	39,358	16	4½	347,226	14	10
1842	595	548,783	12	9	3,105	0	10	299,554	10	8
1843	764	563,022	2	4	39,265	13	1	290,292	4	10
Average of three years	686	570,147	2	11¾	27,243	3	5	312,357	16	10
		Court of Exchequer.								
From 1836 to 1843 inclusive -	316	132,675	2	3	56,163	6	6	87,849	0	11¼

The arrears of rent have since greatly increased, although the object of the courts is confined to getting in the rents, improvements

The remedy for this state of things is simply the sale of the incumbered estate, or of a sufficient portion of it to enable the owner to discharge his incumbrances, and to place him in a position to do his duty towards the remainder. This is the master key to unlock the field of industry in Ireland. The seller, in all such cases, is known to be incapable of making a proper use of the land. The purchaser, on the other hand, may be safely assumed to be an improver. It is a natural feeling in which almost all men indulge, and purchases of land are seldom made without a distinct view to further profitable investments in improvements. 'To give every prudent facility for the transfer by 'sale of real property from man to man, by the adoption of a sim-'ple, cheap, and secure system of transfer, in lieu of the present 'barbarous, unsafe, and expensive system, so that real property 'could be bought and sold in Ireland with as much freedom and 'security as other property*,' is therefore the object at which we ought to aim, and especially to encourage the investment of small capitals in the land, it being through the instrumentality of the small capitalists chiefly that the country can be civilised and improved. 'The purchasers would give extensive and per-'manent employment to numbers of people around them in 'carrying out that natural desire of man, the improvement 'of newly-acquired landed property; they would promote in-'dustry everywhere; they would greatly increase the value of 'land generally. By their number, all property in land would 'be rendered secure against revolutionary violence. The habits 'and example of men who had made money by industry, and 'who might invest their savings in land, would place the social 'system of Ireland on a solid basis. The best of the Protestants 'and Roman Catholics, those who had been careful and indus-'trious, would be purchasers of land, and all would have a 'common interest in peace and order. That surplus population 'beyond the means of present employment, which now oppresses 'and embarrasses the country, might gradually be absorbed, and 'become a source of wealth and strength. Towns would every-'where improve, and new ones might arise by the extension of 'the railway system, spreading industry and civilisation among 'men now sunk in indolence and almost barbarism.'†

All the parties concerned in these transfers would be benefited by them. Lands are comparatively valueless to those who have

being practically seldom attempted. The condition of the people in these neglected, and, with reference to their present state of cultivation, over-populated estates, is melancholy in the extreme.

* 'Observations upon certain Evils,' &c. † Ibid.

no capital to improve them, and they are often justly felt to be a burden and a disgrace, because they entail duties which the nominal owners have no means of performing. The effect on the character and prospects of the whole body of landed proprietors would be as described in the following passage from the author to whom we are already so much indebted: 'When men, 'however young, act under responsibility, they usually proceed 'with caution; if others will think and act for them, and pro-'vide for their wants, and secure them from poverty and danger, 'their own prudential faculties may become dormant; and a 'man, or any class of men so protected, are likely to exhibit de-'ficiency in the qualities of prudence and good management of 'their affairs. But owners of land would not evince any such 'deficiency, if once they felt that they would be ruined, and 'their families also, if they were not governed by the same 'rules of prudence which other men must observe, and which 'necessarily enter into the proper management of all other 'descriptions of property. The present difficulties of sale of 'land, and the consequent protection afforded to entailed pro-'perties, are the chief reasons why so many persons of the class 'of proprietors are in difficulties. With more liberty, there 'would be more prudence and more attention to estates on the 'part of owners, from which they and the country would be 'great gainers.'*

The manner in which the interests of the public at large are affected is correctly described in the following passage from the other pamphlet. 'If these premises be correct; if employment 'with regular wages must be found for the peasantry; if capital 'be necessary, and the parties holding the land do not pos-'sess sufficient for this purpose; it follows, either that Govern-'ment must continue to supply the capital required, not merely 'by a loan on an emergency, but as part of its regular system 'of action; or else that the land must pass into the hands of 'those who do possess the means of employing the people — 'of men who will carry on agriculture as a business, and will 'bring to their occupation the capital, the habits of business, 'and the energy and intelligence which have raised the com-'merce and manufactures of this nation to their present pre-'eminence.'†

Her Majesty's Government being deeply impressed with the importance of these views, introduced a Bill into Parliament in the Session of 1847, the object of which was to enable the

* 'Observations upon certain Evils,' &c.

† 'Observations on the Evils resulting to Ireland,' &c.

owners of incumbered estates in Ireland to sell the whole or a portion of them, after the circumstances of each estate had been investigated by a Master in Chancery, with a view to secure the due liquidation of every claim upon it. The sale was not to take place without the consent of the first incumbrancer, unless the Court of Chancery should consider the produce sufficient to pay the principal and all arrears of interest, or unless the owner or some subsequent incumbrancer should undertake to pay to the first incumbrancer any deficiency which might exist, and give such security for the performance of his undertaking as the court might direct. This Bill passed the House of Lords, but was withdrawn in the Commons, owing to the opposition of some of the Irish proprietors, and to objections entertained by the great Insurance Companies, who are the principal lenders on Irish mortgages, to having their investments disturbed. The failure of the Bill was a national misfortune which cannot be too soon remedied.

The Government, however, did what was in its power. A system has existed in Ireland since the time of Queen Anne for the registration of all deeds affecting landed property; and of late years a similar registration has been established of all judgments relating to that description of property. The attention of the Lord Lieutenant has been called to the practicability of diminishing the delay and expense attending transfers of landed property, by the adoption of two simple practical measures, viz., that when searches have been made in the office of the Registrar of Deeds, copies should be recorded in the office, as well as given to the parties on whose behalf they are made; and that when judgments, &c., recorded in the office of the Registrar of Judgments have been satisfied, notice should be immediately sent to the Registrar, in order that such satisfaction may be recorded in the books of his office.* The consequence of the neglect of the first of these obvious precautions was, that, after expensive searches had been made in the Registry Office, the same searches often had to be made again and again, at the same expense, at the instance of other parties, however limited the transactions might be for the security of which these inquiries into past transfers and incumbrances were made; and the consequence of the neglect of the other precaution was that, if, after a search had been made through the records deposited in the office of the Registrar of Judgments to ascertain whether any judgment had been passed against the estate, it appeared that any such judgment had been given, another search had to

* Treasury Minute, October 15. 1847.

be made in the courts of law, involving fresh loss of time and fresh expense, to ascertain whether it had been satisfied.

But it is time that we should resume our narrative.

The potato disease, which had manifested itself in North America in 1844*, first appeared in these islands late in the autumn of 1845. The early crop of potatoes, which is generally about one-sixth of the whole, and is dug in September and October, escaped; but the late, or what is commonly called the 'people's crop,' and is taken up in December and January, was tainted after it arrived at an advanced stage of maturity. When the disease had once commenced, it made steady progress, and it was often found, on opening the pits, that the potatoes had become a mass of rottenness. Nevertheless, this year the attack was partial; and although few parts of the country entirely escaped, and the destruction of human food was, on the whole, very great, a considerable portion of the crop, which had been a more than usually large one, was saved. The wheat crop was a full average; oats and barley were abundant; and of turnips, carrots, and green crops, including a plentiful hay harvest, there was a more than sufficient supply. On the Continent, the rye crops failed partially, and the potato disease was very destructive in Holland, Belgium, France, and the west of Germany.

In the following year (1846) the blight in the potatoes took place earlier, and was of a much more sweeping and decisive kind. 'On the 27th of last month (July), I passed,' Father Mathew writes in a letter published in the Parliamentary Papers, 'from Cork to Dublin, and this doomed plant bloomed 'in all the luxuriance of an abundant harvest. Returning on 'the 3rd instant (August), I beheld with sorrow one wide waste 'of putrefying vegetation. In many places the wretched people 'were seated on the fences of their decaying gardens, wringing 'their hands, and wailing bitterly the destruction that had left 'them foodless.' The first symptom of the disease was a little brown spot on the leaf, and these spots gradually increased in number and size, until the foliage withered, and the stem became brittle, and snapped off immediately when touched. In less than a week the whole process was accomplished.† The

* The year 1845 was the second and worst in America; and in 1846, although it still extensively prevailed, the disease was of a milder type and only partially affected the crop.

† The following extract from Captain Mann's Narrative, descriptive of what took place at this period in the county of Clare, will be read with interest:—'The early culture of 1846 was in no way improved; 'a great proportion of the land was again tilled with potatoes, under

fields assumed a blackened appearance, as if they had been burnt up, and the growth of the potatoes was arrested when they were not larger than a marble or a pigeon's egg. No potatoes were pitted this year. In many districts where they had been most abundant, full-grown wholesome potatoes were not to be procured; and even in London and other large towns, they were sold at fancy prices, and were consumed as a luxury by the wealthy, — rice and other substitutes being had recourse to by the body of the people. The crop of wheat this year was barely an average one, while barley and oats, and particularly the former, were decidedly deficient. On the Continent, the rye and potato crops again failed, and prices rose early in the season above those ruling in England, which caused the shipments from the Black Sea, Turkey, and Egypt to be sent to France, Italy, and Belgium; and it was not till late in the season that our prices rose to a point which turned the current of supplies towards England and Ireland. The Indian corn crop in the United States this year was very abundant, and it became a resource of the utmost value to this country.

In the third year (1847) the disease had nearly exhausted itself. It appeared in different parts of the country, but the plants generally exerted fresh vigour and outgrew it. The result, perhaps, could not have been better. The wholesome distrust in the potato was maintained, while time was allowed for making the alterations which the new state of things required. Although the potatoes sown in Ireland in the year 1847 were estimated only at 1-5th or 1-6th of the usual quantity, it would have been a serious aggravation of the difficulties and discouragements under which that portion of the empire was suffering, if the disease had reappeared in its unmitigated form. The crops of wheat, barley, and oats, in almost every part of the United

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'the expectation that, as in former years, the late scarcity would be 'followed by a bountiful supply. The first alarm was in the latter 'part of July, when the potatoes showed symptoms of the previous 'year's disease; but I shall never forget the change in one week in 'August. On the first occasion, on an official visit of inspection, I had 'passed over thirty-two miles thickly studded with potato fields in full 'bloom. The next time the face of the whole country was changed; 'the stalk remained bright green, but the leaves were all scorched 'black. It was the work of a night. Distress and fear was pictured 'in every countenance, and there was a general rush to dig and sell, or 'consume the crop by feeding pigs and cattle, fearing in a short time 'they would prove unfit for any use. Consequently there was a very 'wasteful expenditure, and distress showed itself much earlier than in 'the preceding season.'

Kingdom, and in most of the neighbouring countries on the Continent, were this year, to use the epithet generally applied to them, magnificent; and it became more and more apparent on the brink of what a precipice we had been standing, as the unusually small remaining stock of old corn came to light, and the exhausted and embarrassed state to which every description of business had been reduced, notwithstanding the advantage of a good harvest, gradually declared itself.

Among the numerous causes which enhanced the difficulty of obtaining adequate foreign supplies at moderate rates during the most exigent period of the winter of 1846–7, one of the most embarrassing, was the sudden and extraordinary advance in freights, which occurred simultaneously in the ports of the United States of America, the Mediterranean, and the Black Sea. Vessels were not obtainable in the Black Sea and the Danube at less than 18*s.* and 22*s.* per quarter for corn, whereas the usual rates are 9*s.* and 11*s.*; while in the United States, where large shipments of grain, flour, and Indian corn, were going forward to Europe, the comparatively limited number of vessels caused the rates to run up to 9*s.* per barrel for flour, and 16*s.* and 18*s.* per quarter for Indian corn to British ports, the usual rates being 2*s.* 6*d.* to 3*s.* 6*d.* per barrel of flour, and 8*s.* and 9*s.* per quarter for Indian corn.

On the 27th January, 1846, Sir Robert Peel proposed his measure for the relaxation of the duties on the importation of foreign corn, by which the scale of duties payable on wheat was to range from 4*s.* to 10*s.* per quarter, and Indian corn, which had previously been charged with the same duty as barley, was to pay only 1*s.* a quarter. This was to last till February, 1849, when an uniform duty of 1*s.* a quarter was to be charged on every description of grain. The bill passed the House of Lords on the 29th June, 1846; and Sir R. Peel announced his resignation in the House of Commons on the same day.

Immediately on the meeting of Parliament in January, 1847, Lord J. Russell introduced bills to suspend until the 1st September, 1847, the duties on foreign corn, and the restrictions imposed by the Navigation Laws on the importation of corn in foreign vessels; and he at the same time moved a resolution permitting the use of sugar in breweries; all which measures received the sanction of the Legislature. At the close of the same session, the suspension of the Corn and Navigation Laws was extended to the 1st March, 1848.

On the first appearance of the blight in the autumn of 1845, Professors Kane, Lindley, and Playfair, were appointed by Sir Robert Peel to inquire into the nature of it, and to suggest the

best means of preserving the stock of potatoes from its ravages. The result showed that the mischief lay beyond the knowledge and power of man. Every remedy which science or experience could dictate was had recourse to, but the potato equally melted away under the most opposite modes of treatment.

The next step was to order from the United States of America 100,000*l.* worth of Indian corn. It was considered that the void caused by the failure of the potato crop might be filled with the least disturbance of private trade and market prices, by the introduction of a new description of popular food. Owing to the prohibitory duty, Indian corn was unknown as an article of consumption in the United Kingdom.* Private merchants, therefore, could not complain of interference with a trade which did not exist, nor could prices be raised against the home consumer on an article of which no stock was

* The following extract from Captain Mann's Narrative will give some idea of the difficulty of prevailing on the people to have recourse to the new food: — 'The first issue of Indian corn meal was in March '1846. It is impossible to conceive the strong prejudice against it; 'and I may here bear testimony to the benevolent and right feeling of 'the Rev. J. Kenny, P. P. Previously to the sale of the meal being 'commenced, a small portion was sent to me by Commissary-General '(now Sir Edward) Coffin, which I placed in the hands of the reverend 'gentleman. He tried and approved of it; and in order to overcome 'any feeling against it, subsequently, with his two curates, all but en-'tirely lived on the meal made into bread and stirabout, for nearly a 'fortnight, using all his influence to convince the people that the per-'nicious effects ascribed to it were untrue. Such conduct is above any 'praise of mine. The success attending this measure it is quite unne-'cessary for me to allude to; and the merchants, profiting by the 'example, commenced a trade new to them, by importing the article.' The use of Indian corn meal was adopted in hundreds of households, both Protestant and Roman Catholic, besides that of Father Kenny, for the purpose of overcoming the popular prejudice by the force of example. The Society of Arts awarded a gold medal to Mr. O'Brien, baker, of Leinster Street, Dublin, for the attention paid by him to the introduction of cheap popular modes of preparing Indian corn for use; and tens of thousands of pamphlets and printed sheets were distributed through the commissariat, containing instructions for cooking the Indian corn, and showing the people what other cheap descriptions of food were available to them. Those who know how difficult it is to induce a large population to adopt new habits, will be surprised at the success which attended these efforts. The 'yellow meal,' as it is called, was first known as 'Peel's brimstone,' and it was remembered that the attempt to introduce it in a former season of distress occasioned a popular commotion, arising from the absurd notion that it had the effect of turning those who ate it black.

to be found in the home market. Nevertheless, with a view to avoid as long as possible, the doubts and apprehensions which must have arisen if the Government had appeared as a purchaser in a new class of operations, pains were taken to keep the transaction secret, and the first cargoes from America had been more than a fortnight in Cork harbour before it became generally known that such a measure was in progress.

In order to distribute the food so obtained, central dépôts were established in various parts of Ireland, under the direction of officers of the Commissariat, with sub-dépôts under the charge of the Constabulary and Coast Guard; and when the supplies in the local markets were deficient, meal was sold from these dépôts at reasonable prices to Relief Committees, where any existed, and where they did not, to the labourers themselves. In the time of the heaviest pressure (June and July, 1846), one sub-dépôt retailed 20 tons of meal daily, and the issues from a single main dépôt to its dependencies amounted to 233 tons in one week.

The Relief Committees were formed, under the superintendence of a Central Commission at Dublin, for the purpose of selling food in detail to those who could buy it, and giving it to those who could not; the requisite funds being derived from private subscriptions, added to, in certain proportions, by Government donations. The Relief Committees also selected the persons to be employed on the Relief Works carried on under the superintendence of the Board of Works.

If the Irish poor had been in the habit of buying their food, as is the case in England, the object would have been attained when a cheap substitute had been provided for the potato; but as the labouring class in Ireland had hitherto subsisted on potatoes grown by themselves, and money-wages were almost unknown, it was necessary to adopt some means of giving the people a command over the new description of food. This was done by establishing a system of public works, in accordance with the previous practice on similar occasions, both in Ireland and in other countries.

These works, which consisted principally of roads, were undertaken on the application of the magistrates and principal cess-payers, under the act 9 & 10 Vict. c. 1., which was passed for the occasion, and the expense of executing them was defrayed by advances of public money, half of which was a grant, and half a loan to be repaid by the barony. The largest number of persons employed in this first season of relief was 97,000, in August, 1846.

The first symptoms of neglected tillage appeared in the

spring of 1846, and they were worst in those districts in which the Relief Works were carried on to the greatest extent. The improvements in progress on the Shannon and the arterial drainages were also impeded by the preference which the labourers showed for the Relief Works.

The measures of which we have been speaking, were brought to a close on the 15th August, 1846, and they may be considered to have answered their end. The scarcity being partial and local, the deficiency of one part of the country was supplied from the superabundance of others, and the pains taken to prevent the people from suffering want, led to their being better off than in ordinary years. Above all, Ireland was prepared by the course adopted during this probationary season of distress, as it may be called, to bear better the heavy affliction of the succeeding season. No misapplication of the funds deserving of notice took place, except in the instance of the Relief Works, the cause of which was as follows: — The landed proprietors of Ireland had long been accustomed to rely upon Government loans and grants for making improvements of various kinds, and the terms on which the Relief Works were to be executed being more advantageous than any which had been open to them for many years before, a rush took place from all quarters upon this fund, and the special object of relieving the people from the consequences of the failure of their accustomed food, was to a great extent lost sight of in the general fear, which in many cases was not attempted to be concealed, of being deprived of what they called 'their share of the 'grant.' This description of relief, therefore, instead of acting as a test of real distress, operated as a bounty on applications for public works from a class of persons who were at once charged with the administration of the relief, and were interested in the execution of the works. The result was, that while the applications amounted to 1,289,816*l.*, the sum actually sanctioned and expended was only 476,000*l.*, and great part even of this was merely yielded to the distressing appeals pressed on the Lord-Lieutenant on the plea of urgent local destitution, and of the lamentable consequences to be expected from allowing it to remain unrelieved. The other expenses connected with this season of relief were as follows: — Loans on Grand Jury presentments, 130,000*l.*; loss on the purchase and sale of grain, 50,000*l.*; given in aid of Relief Committees, 69,845*l.*; extra staff of the Board of Works, 7527*l.*: thus making the whole sum expended in relief to Ireland, up to the 15th August, 1846, 733,372*l.*, of which 368,000*l.* was in loans, and 365,372*l.*, in

grants. The sum raised by voluntary subscription through the Relief Committees was 98,000*l.*

The new and more decisive failure of the potato crop called for great exertions from Lord John Russell's recently formed Government, and the plan resolved upon was explained in the Treasury minute dated the 31st August, 1846, which was published for general information.*

The system of public works was renewed by the act 9 & 10 Vict. c. 107., which was passed without any opposition in either House of Parliament. In order to check the exorbitant demands which had been made during the preceding season, the whole of the expense was made a local charge, and the advances were directed to be repaid by a rate levied according to the Poor Law valuation, which makes the landlords liable for the whole rate on tenements under 4*l.* yearly value, and for a proportion, generally amounting to one-half, on tenements above that value, instead of according to the grand jury cess (the basis of the repayments under the preceding act), which lays the whole burden upon the occupier. It was also determined that the wages given on the Relief Works should be somewhat below the average rate of wages in the district; that the persons employed should, as far as possible, be paid by task or in proportion to the work actually done by them; and that the Relief Committees, instead of giving tickets entitling persons to employment on the public works, should furnish lists of persons requiring relief, which should be carefully revised by the officers of the Board of Works; the experience of the preceding season having shown that these precautions were necessary to confine the Relief Works to the destitute, and to enforce a reasonable quantum of work.

The question which the Government had to decide, in regard to the renewal of the Commissariat operations, was of the most momentous kind. After all that had taken place during the last few months, it could not be expected that private trade would return, as a matter of course, to its accustomed channels. Neither the wholesale dealers in towns, nor the retail dealers in the rural districts, would lay in even their usual stocks of food; still less would they make the extraordinary provision required to meet the coming emergency, while they had before them the prospect of the Government throwing into the market supplies of food of unknown extent, which would make their outlay so much loss to them. The Government could not, therefore, cal-

* This minute will be found from pages 67 to 71 of the first Board of Works Series of 1847.

culate, as it did on the last occasion, on finding the private trade, by means of which the people are ordinarily supplied with food, proceeding as usual, and on being able to add more or less, at its discretion, to the resources which that trade afforded. Mercantile confidence in this branch of business was for the time destroyed. The trade was paralysed; and if this state of things had been suffered to continue, the general expectation of the Government again interfering would inevitably have created a necessity for that interference, on a scale which it would have been quite beyond the power of the Government to support.

Under these circumstances it was announced, — 1st. That no orders for supplies of food would be sent by the Government to foreign countries. 2ndly. That the interference of the Government would be confined to those western districts of Ireland in which, owing to the former prevalence of potato cultivation, no trade in corn for local consumption existed. And 3rdly. That even in these districts the Government dépôts would not be opened for the sale of food, while it could be obtained from private dealers at reasonable prices, with reference to those which prevailed at the nearest large marts. It was also determined to adhere to the rule acted upon during the preceding season, not to make any purchases in the local markets of Ireland, where the appearance of the Government as a buyer must have had the effect of keeping up prices and encouraging interested representations; and a promise was given that every practicable effort would be made to protect the supplies of food introduced by private traders, both while they were in transit and when they were stored for future consumption.

The Relief Committees of the preceding season were reorganised; the rules under which they had acted were carefully revised; and inspecting officers were appointed to superintend their proceedings, and keep the Government informed of the progress of events. A large proportion of the people of Ireland had been accustomed to grow the food they required, each for himself, on his own little plot of ground; and the social machinery by which, in other countries, the necessary supplies of food are collected, stored, and distributed, had no existence there. Suddenly, without any preparation, the people passed from a potato food, which they raised themselves, to a grain food, which they had to purchase from others, and which, in great part, had to be imported from abroad; and the country was so entirely destitute of the resources applicable to this new state of things, that often, even in large villages, neither bread nor flour was to be procured; and in country districts, the

people had sometimes to walk twenty miles before they could obtain a single stone of meal. The main object for which the Relief Committees were established, therefore, was to provide a temporary substitute for the operations of the corn-factor, miller, baker, and provision-dealer, and to allow time and furnish the example for a sounder and more permanent state of things; but they were not precluded from giving gratuitous relief in cases of more than ordinary destitution. The agency of the Relief Committees was this season almost universally substituted for the coast guard and constabulary dépôts, with the object of drawing out the resources of the country before the Government dépôts were had recourse to, of inducing the upper and middle classes to exert themselves, and of preventing a direct pressure of the mass of the people upon the Government dépôts, which in a time of real famine it would have been very difficult to resist.

Such was the plan resolved upon for the campaign of 1846–7, against the approaching famine, and we shall now show the result of the struggle.

It was hoped that a breathing-time would have been allowed at the season of harvest, to enable the Board of Works to reorganise their establishments on a scale proportioned to the magnitude of the task about to devolve on them, and to prepare, through their district officers, plans and estimates of suitable works for the assistance of the baronial sessions. This interval was not obtained. The general failure of the potato crop spread despondency and alarm from one end of Ireland to the other, and induced every class of persons to throw themselves upon the Government for aid. On the 6th of September, the Lord Lieutenant ordered all the discontinued works under the 9 & 10 Vict. c. 1. to be recommenced, and sessions were rapidly held in all the southern and western counties of Ireland, at which roads were presented in the mass, under the 9 & 10 Vict. c. 107., the cost of which, in some cases, much exceeded the annual rental of the barony. The resident gentry and rate-payers, whose duty it was to ascertain, as far as possible, the probable amount of destitution in their neighbourhood, the sum required to relieve it, and the works upon which that sum could best be expended, and who had the necessary local knowledge, in almost every case devolved these functions upon the Board of Works, who could only act on such information as they could obtain from naval and military officers and engineers, most of whom were selected from among strangers to the district, in order to prevent undue influence being used. After that, to advance the funds; to select the labourers; to superintend the work; to pay the

people weekly; to enforce proper performance of the labour; if the farm works were interrupted, to ascertain the quantity of labour required for them; to select and draft off the proper persons to perform it; to settle the wages to be paid to them by the farmers, and see that they were paid; to furnish food, not only for all the destitute out of doors, but in some measure for the paupers in the workhouse, were the duties which the Government and its officers were called upon to perform. The proprietors and associated rate-payers having presented *indefinitely*, said it was the fault of the Government and its officers if the people were not instantly employed, and these officers were blamed, even by persons of character and understanding, if they were not at once equal to execute the duties which in this country are performed in their respective districts by thousands of country gentlemen, magistrates, guardians, overseers, surveyors, &c., resident throughout the country, and trained by the experience of years to the performance of their various functions. The Board of Works became the centre of a colossal organisation; 5000 separate works had to be reported upon; 12,000 subordinate officers had to be superintended. Their letters averaged upwards of 800 a-day, and the number received on each of the following days was —

January 4th -	- 3104	April 19th -	- 4340
February 15th -	- 4900	May 17th -	- 6033*

The strain on the springs of society from this monstrous system of centralisation was fearful in the extreme. The Government, which ought only to mediate between the different classes of society, had now to bear the immediate pressure of the millions on the sensitive points of wages and food. The opposition to task-work was general, and the enforcement of it became a trial of strength between the Government and the multitude. The officers of the Board were in numerous instances the objects of murderous attacks, and it became necessary, for the preservation of the whole community, to have recourse to the painful expedient of stopping the works whenever cases of insubordination or outrage occurred.

Meanwhile the number of persons employed on the works was

* A member of the Board of Works, writing to a friend, observed as follows: — 'I hope never to see such a winter and spring again. I 'can truly say, in looking back upon it, even now, that it appears to 'me, not a succession of weeks and days, but one long continuous day, 'with occasional intervals of nightmare sleep. Rest one could never 'have, night nor day, when one felt that in every minute lost a score 'of men might die.'

rapidly on the increase. The utmost exertions of two sets of inspecting officers, one under the Board of Works, and the other under Sir R. Routh, were insufficient to revise the lists, and the Lord-Lieutenant in vain directed that no person rated above 6*l.* for the Poor-law cess should, except under very special circumstances, be eligible for employment. Thousands upon thousands were pressed upon the officers of the Board of Works in every part of Ireland, and it was impossible for those officers to test the accuracy of the urgent representations which were made to them. The attraction of money wages regularly paid from the public purse, or the 'Queen's pay,' as it was popularly called, led to a general abandonment of other descriptions of industry, in order to participate in the advantages of the Relief Works. Landlords competed with each other in getting the names of their tenants placed on the lists; farmers dismissed their labourers, and sent them to the works; the clergy insisted on the claims of the members of their respective congregations; the fisheries were deserted; and it was often difficult even to get a coat patched or a pair of shoes mended, to such an extent had the population of the south and west of Ireland turned out upon the roads. The average number employed in October was 114,000; in November, 285,000; in December, 440,000; and in January 1847, 570,000. It was impossible to exact from such multitudes a degree of labour which would act as a test of destitution. Huddled together in masses, they contributed to each other's idleness, and there were no means of knowing who did a fair proportion of work and who did not. The general enforcement of the system of task work had justly been considered necessary to stimulate the industry of the labourers on the Relief Works; but when this point had been carried, after a hard struggle, the old abuse re-appeared in the aggravated form of an habitual collusion between the labourers and the overseers who were appointed to measure their work; so that the labourers, if they could be so called, were not only as idle as ever, but were enabled withal to enjoy a rate of wages which ought only to have been the reward of superior industry.

The plan of the Labour Rate Act (9 & 10 Vict. c. 107.) was based on the supposition that the great majority of the landlords and farmers would make those exertions and submit to those sacrifices which the magnitude of the crisis demanded, leaving only a manageable proportion of the population to be supported by the Board of Works; and the act would probably have answered its object, if a larger, instead of a smaller, number of persons than usual had been employed in the cultivation and improvement of the land, and the Relief Committees had put

only those who were really destitute upon the lists. Including the families of the persons employed, upwards of two millions of people were maintained by the Relief Works, but there were other multitudes behind, including often the most helpless portion of the community, for whom no work could be found. The Relief Works did not always furnish a subsistence even for those who were employed on them. The wages, paid regularly in money, were higher than any which had ever been given for agricultural labour in Ireland, but at the existing prices of food, they were insufficient for the support of a family, melancholy proof of which was afforded by daily instances of starvation in connexion with the Relief Works.* The fearful extent to which the rural population had been thrown for support upon the Board of Works also threatened a disastrous neglect of the ordinary tillage. If the people were retained on the works, their lands must remain uncultivated. If they were put off the works, they must starve. A change of system had become inevitable, and when Parliament met in the end of January, it was announced that the Government intended to put an end to the public works, and to substitute for them another mode of relief, which will be hereafter described.

Meanwhile the pressure on the Relief Works was continually on the increase, and the persons daily employed who, in January, had been 570,000, became, in February, 708,000, and in March amounted to the enormous number of 734,000†, representing,

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* An officer of the Board of Works, observing the emaciated condition of the labourers, reported that, as an engineer, he was ashamed of allotting so little task-work for a day's wages, while, as a man, he was ashamed of requiring so much. In some districts proof of attendance was obliged to be considered sufficient to entitle the labourer to his wages. The exhausted state of the workmen was one main cause of the small quantity of work done compared with the money expended. The Irish peasant had been accustomed to remain at home, cowering over his turf fire, during the inclement season of the year, and exposure to the cold and rain on the roads, without sufficient food or clothing, greatly contributed to the prevailing sickness. In order to obviate this as far as possible, a circular letter was issued by the Board of Works (first series of 1847, page 499.) directing that, in case of snow or heavy rain, the labourers should merely attend roll call in the morning, and be entered on the pay list for half a day's pay; and if it afterwards became fine, they were to come to work, which would entitle them to a further allowance.

† In this month (March) the expenditure upon the Relief Works was, —

at a moderate estimate of the average extent of each family, upwards of three millions of persons. At last, the Government, seeing that the time suited for agricultural operations was rapidly passing away, and that the utmost exertions made on the spot had failed in keeping the numbers in check, took the matter into its own hands, and directed that on the 20th March, 20 per cent. of the persons employed should be struck off the lists; after which successive reductions were ordered, proportioned to the progress made in bringing the new system of relief into operation in each district. These orders were obeyed, and the crisis passed without any disturbance of the public peace or any perceptible aggravation of the distress. The necessary labour was returned to agriculture, and the foundation was laid of the late abundant harvest in Ireland, by which the downward progress of that country has been mercifully stayed, and new strength and spirits have been given for working out her regeneration. In the first week in April the persons employed on the Relief Works were reduced to 525,000; in the first week in May to 419,000; in the first week in June to 101,000; and in the week ending the 26th June to 28,000. The remaining expenditure was limited to a sum of 200,000*l.* for the month of May, and to the rate of 100,000*l.* a month for June, July, and the first fifteen days of August, when the act expired. These sums were afterwards permitted to be exceeded to a certain extent, but the object was attained of putting a curb on this monstrous system, and bringing it gradually and quietly to a close. Great exertions were made, and a heavy expense was incurred, to leave the roads and other works in progress in a safe and passable state as far as they had gone; but their completion must depend upon the parties locally interested in them. From the first commencement of the Relief Works in February

Labour and Plant - - -	£1,024,518
Extra Staff - - -	26,254
Per Month - -	£1,050,772

In the week ending 13th March, 1847, the expenditure for all the above services was -	£259,105
which gives a daily average for that week -	43,184
On the 5th March there was remitted into the interior for carrying on Relief Works -	68,000
On the 30th March, only - - -	16,000
These two are the extremes during the month.	
The mean (for the month) of daily remittance -	38,920

1846, repeated warnings were given that the object was not the works themselves, but the relief of the prevailing destitution through the employment afforded by them; that the works would be closed as soon as they were no longer required for that purpose; and that if the proprietors desired to complete them, they might do so under the ordinary system of Government loans made on the security of county presentments.*

This system threw off a shoot, the history of which it is necessary to trace. In order to impose some limits on what threatened to become a gigantic system of permanently supporting one portion of the community at the expense of the remainder, and of making provision out of the taxes for classes of undertakings which properly belong to the economy of private life, the application of the public money under the Labour Rate Acts was strictly limited to works of a public character, which were not likely to be undertaken except for the purpose of giving relief. This condition was generally objected to in Ireland; and although no disposition was evinced to take advantage of the loans which the Government was ready to make under the General Improvement and Drainage Acts, a great desire was expressed that the funds advanced under the Labour Rate Act should be employed on what were called reproductive works. The Lord Lieutenant, having obtained the sanction of the Government, yielded to this general feeling, and authorised presentments to be made for the drainage and subsoiling of the estates of individuals, provided they consented to their estates being charged with the repayment of the sums advanced. This was the arrangement which acquired so much notoriety under the name of 'Labouchere's Letter,' owing to its having been announced by the publication of a letter from Mr. Labouchere, who then held the office of Secretary for Ireland, to the Board of Works, dated 5th October, 1846; but the result did not answer the expectations which had been formed. The aggregate amount presented 'under the Letter,' was 380,607*l.*, of which presentments were acted on to the gross amount of 239,476*l.* The sum actually expended was about 180,000*l.*; and the largest number of persons at any one time employed was 26,961, in the month of May 1847. Some incidental good was done by the example of the advantages of thorough draining, and of

* The proceedings of the Government in reference to this point, are fully explained in a letter from Mr. Trevelyan to Colonel Jones, and in the accompanying Treasury Minute, printed in the first Board of Works Series for 1847, pp. 97—100.

the proper mode of executing it; but, as a remedy for the wide-spread calamity, the plan totally failed.

Upon this a two-fold agitation sprang up. Some landed proprietors required that their liability should be confined to the relief of the destitute on their own estates; while others demanded that, instead of being employed on the roads, the people should be paid for working on their own farms. Both these movements were steadily resisted by the Government. The objection to the first was, that if the inhabitants of the pauperised districts had been separated from the rest in the administration of the measures of relief, they must either have starved or have become entirely dependent on the Consolidated Fund; while, if the other plan had been adopted, the entire cost of carrying on the agriculture of the country would have been transferred to the Government, without its being possible either to test the applications for assistance, or to enforce a proper amount of exertion. This last scheme was most clamorously urged in the county of Clare, and it may be considered as the masterpiece of that system of social economy according to which the machine of society should be worked backwards, and the Government should be made to support the people, instead of the people the Government. The Government was also to provide tools and seed as well as wages, but the rent was to be received by the same parties as before.

Baronial presentments were authorised for the construction of railway earthworks, as relief works under the 9 & 10 Vict. c. 107., subject to the conditions required for the fulfilment of the object of the Act*; but advantage was taken of this permission only in two baronies of the county of Cork, where the Waterford and Limerick railway was aided from this source.

The silver currency, which had previously sufficed for a people who lived upon potatoes grown by themselves, and paid their rent by so many days' labour, fell short of what was required to pay the labourers employed on the numerous Relief Works carried on simultaneously in different parts of the country, and a large supply was therefore distributed, by means of a Government steamer, among the principal towns on the coast of Ireland. On the cessation of the Relief Works, the greater part of this coin accumulated in the banks, which were relieved by the transmission of the surplus to the Cape of Good Hope to aid in carrying on the Caffre war.

In the Commissariat branch of the operations, every pledge which had been given was strictly adhered to, and confidence

* See page 44. of the first Board of Works Series of 1847.

having been re-established, prodigious efforts were made by the mercantile community to provide against the approaching scarcity. The whole world was ransacked for supplies; Indian corn, the taste for which had by this time taken root in Ireland, rose to a higher price than wheat; and the London and Liverpool markets were again and again swept by the enterprising operations of the Irish dealers, who, from an early period, appreciated the full extent of the calamity, and acted upon the principle that the gulf which had opened in Ireland would swallow all that could be thrown into it, and remain still unsatisfied. In February, 1847, the beneficial effect of these measures began to be apparent. On the 24th of that month, Mr. N. Cummins, a respectable merchant of Cork, wrote as follows to Mr. Trevelyan: —

'From this gloomy picture I turn to the supply of food, and am happy to say that in this quarter the importations, both direct and from England, during the past month, have been very large; heavy cargoes of maize continue almost daily to arrive, and I feel persuaded that the stocks of bread stuffs generally are accumulating here to a much larger amount than some of our dealers would have it believed. Prices cannot, however, be quoted as more than a turn below the extreme point yet; they stand as follows: say Indian corn by retail, 17*l.* 15*s.* and 18*l.* per ton; Indian meal to 19*l.*; oatmeal, 25*l.*; wheaten meal, 19*l.* to 20*l.* per ton.'

On the 12th March, the same gentleman wrote —

'Our market for Indian corn seems at length quite glutted; the arrivals within the last few days have been so extremely numerous that the trade is unable to take off the supply, or indeed to find sufficient stowage in the city. Several cargoes for discharge here are at this moment lying under demurrage, and I may quote the article 15*s.* to 20*s.* per ton cheaper than a fortnight since.'

And on the 19th —

'There are at present over 100 sail, containing an aggregate amount of bread stuffs not short of 20,000 tons, afloat in our harbour, and maize, which a month since brought freely 18*l.* per ton, is this day offered in small parcels at 15*l.*'

And on the same day Father Matthew wrote to Mr. Trevelyan as follows: —

'For the first time since the Lord visited this unhappy land with famine, I address you with delight. The markets are rapidly falling; Indian corn from 16*l.* to 15*l.* per ton. The vast importations, and the still more vast exportations from America, have produced this blessed effect.'

On the 26th March, Mr. Cummins states —

'I have now to report the continuance each day of numerous arrivals of food cargoes here; the additional number during the present week (mostly maize laden) considerably exceeds 100 sail, several being American ships of large burthen, and although many have proceeded to other ports, the number afloat, waiting orders or sale, has been fully doubled. I cannot estimate the fleet this day in our harbour at less than 250 sail, nor the contents at much under 50,000 tons. Indian corn may be purchased at 14*l.* by the cargo, and retailed at 15*l.* per ton.'

It now began to be perceived that more was to be expected from the collective exertions of the merchants of the United Kingdom, than from the Admiralty or the Commissariat. The whole quantity of corn imported into Ireland in the first six months of 1847 was 2,849,508 qrs., which was worth at the then current prices, 8,764,943*l.*; and the Irish market was, to use the words of the present Lord Lieutenant, 'freer, cheaper, 'and better supplied, than that of any country in Europe where 'distress prevailed, and where those measures of interference 'and restriction had been unwisely adopted which were successfully resisted here.' The price of Indian corn, which in the middle of February had been 19*l.* a-ton, was reduced at the end of March to 13*l.*, and at the end of August to 7*l.* 10*s.* a-ton; and such was the quantity of shipping which flocked to the United States on the first intelligence of the unusual demand for freight, that the rate for the conveyance of corn to the United Kingdom, which had been as high as 9*s.* per barrel during the winter months, was as low as 4*s.* 6*d.* in May, and has since fallen to 1*s.* 9*d.* It may safely be asserted that these results would not have been obtained, if the great body of our English and Irish merchants and shipowners, instead of having free scope given to their exertions, had been left under the discouraging impression that all their calculations might be upset by the sudden appearance in the foreign market of Government vessels and Government orders for supplies. The noble harbour of Cork was established as the house of call and entrepôt for the grain ships bound to every part of Western Europe; and the merchant being now free either to sell on the spot or to re-export, Ireland began to enjoy the benefit of her admirable commercial position, by getting the first, and largest, and cheapest supply.

Nevertheless, the public establishments were not idle. Upwards of 300,000 quarters of corn were purchased from time to time to supply the Government depôts on the western coast of Ireland, and large stores of biscuit and salt meat, which had been laid up at the different military stations in the year 1843,

in anticipation of popular disturbances arising out of the repeal movement, were now applied to the relief of the people.* One of the consequences of the change from a potato to a corn diet, was, that the means of grinding were seriously deficient. The powerful Admiralty mills at Deptford, Portsmouth, Plymouth, and Malta, besides two large hired mills, were, therefore, constantly employed in grinding the corn bought by the Commissariat, leaving the mill power of Ireland to the private importers of grain into that country; and hand-mills, on the principle of the old Irish Quern, were made for distribution in the most distressed districts; while others, constructed on an improved principle, were procured from France. Thirty-four large depôts were established on the western side of Ireland, from Dunfanaghy, in the most northern part of Donegal, to Skibbereen, in the south-west of the county of Cork: and the sales were made as far as possible to the Relief Committees, with the double object of drawing forth the resources and activity of the upper classes, and of preventing an indiscriminate pressure upon the depôts, which it would have been difficult to resist. Several ships of war were moored in convenient situations, and used as store-ships. The largest and most powerful war-steamers, reinforced when the occasion required it, by sailing vessels, were appropriated to the conveyance of the

* The following shows the extent of the Government interference in the supply of food in the two seasons of 1845—46 and 1846—47:—

	Reduced to general denomination of quarters.	Cost.
		£
Total quantity of Indian Corn and Oatmeal provided for the Relief Service during the first season of distress, up to August 1846 -	98,810	163,240
Of this quantity there remained in store at the close of the first season of the operations -	14,575	24,073
Total quantity of provisions of all kinds (Indian Corn, Wheat, Barley, the meal of those grains, Rye-meal, Biscuit, Peas, Beans, and Rice) provided for the Relief Service, during the second season of distress up to September 1847 - - - - - -	289,335	672,767
	303,910	696,840
There remained in store at the close of the second season of the operations, about -	108,960	249,836

meal from the mills in England to the depôts in Ireland, and every other available steamer, not excepting the Admiralty yacht, was employed in making the necessary transfers between the depôts, and in conveying the supplies which the Relief Committees had purchased.

The highest praise to which these great operations are entitled is, that they were carried through without any sensible disturbance of the ordinary course of trade, and that in some important respects they even gave new life and development to it. The purchases were all made in the home market, and care was taken never to give the highest current price. The sales were made at the wholesale price of the nearest large mart, with a reasonable addition for the cost of carriage, &c. When supplies of food could be obtained elsewhere, the depôts were closed. Private merchants, therefore, imported largely in the face of the Government depôts; while in the remote western districts the Commissariat acted as pioneers to the ordinary trade, and led the way to habits of commercial enterprise where before they had no existence.

There was the same general pressure for the premature opening of the depôts as for the early commencement of Relief Works, but in this case it was successfully resisted. It was explained that the Government depôts were intended to be a last resource to supply the deficiencies of the trade, and not to take the place of that trade; and that if the depôts were opened while the country was still full of the produce of the late harvest, that produce would be exported before the spring supplies arrived from America and the Black Sea, and the population would become entirely dependent upon the depôts, which must in that case soon come to a discreditable and disastrous stop. Meanwhile, great exertions were made to protect the provision trade, and the troops and constabulary were harassed by continual escorts. The plunder of bakers' shops and bread-carts, and the shooting of horses and breaking up of roads, to prevent the removal of provisions, were matters of daily occurrence; and at Limerick, Galway, and elsewhere, mobs prevented any articles of food from leaving the towns, while the country people resisted their being carried in. Convoys under military protection proceeded at stated intervals from place to place, without which nothing in the shape of food could be sent with safety.

As many as 1097 Relief Committees were established under the superintendence of the Commissariat; while 199,470*l.** was

* This was the amount of the private subscriptions upon which Government donations were made; but other large sums were raised

subscribed by private individuals, and 189,914*l.* was granted by the Government (making together 389,384*l.*) in support of their operations.

One of the functions of these committees was to provide supplies of food for sale at the current market price; and when the rise of prices began to be seriously felt, the Government was called upon from every part of Ireland, to permit the grants of public money made to the committees to be employed in reducing the price of provisions to that of ordinary years. To this demand it was impossible for the Government to accede. In 1845–6 the scarcity was confined to a few districts of Ireland, while there was abundance every where else. The question therefore at that time was a money one, and all that was required to relieve the distress, was to purchase a sufficient

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by local Irish subscriptions, through the medium of some of the Relief Committees, of which no account was furnished to the Government, because the Committees concerned would not submit to the rule of selling at cost price except in cases of extreme destitution. Large funds were also administered by private individuals, quite independently of the Local Relief Committees; of which class of operations the following account of the expenditure of a Protestant clergyman in the south-west of Ireland, with a parish of 10,000 inhabitants, no resident gentry, not a single town in the whole of it, nor a road through the greater part of it, may be taken as a specimen:—

	£	s.	d.
Gratuitous aid of every sort - -	306	6	0
Loss by sale of food under market price, when exorbitant - - -	208	9	0
Payment of labour — making road to the bog, and other public works - -	150	10	0
Seed-corn, wheat, oats, and barley -	300	0	0
Turnip seed - - - -	15	0	0
Fishing materials - - -	150	10	6
	£1,130	15	6

Funds of this sort administered by benevolent and public-spirited individuals in Ireland, were generally supplied by the exertions of their relations and friends, or by grants from societies in England and elsewhere. It was a common practice for ladies in England to have parishes assigned to them in Ireland, and each lady raised all she could, and made periodical remittances to the clergyman of her adopted parish, receiving accounts from him in return of the manner in which the money was expended. The self-denial necessary to support this charitable drain was carried to such an extent at Brighton and elsewhere, that the confectioners and other tradespeople suffered severely in their business.

quantity of food elsewhere, and to send it into the distressed districts. In 1846–7, on the contrary, the scarcity was general, extending over all Western Europe, and threatening a famine in other quarters besides Ireland. The present question, therefore, was not a money, but a food question. The entire stock of food for the whole United Kingdom was insufficient, and it was only by carefully husbanding it, that it could be made to last till harvest. If provisions had been cheapened out of the public purse, consumption would have proceeded in a time of severe scarcity at the same rate as in a time of moderate plenty; the already insufficient stock of food would have been expended with a frightful rapidity, and in order to obtain a few weeks of ease, we should have had to endure a desolating famine. Those Relief Committees which attempted to follow this plan speedily exhausted their capital; and private dealers (who necessarily lay in their stock at the current market price, whatever that may be) retired from the competition with public bodies selling food at prices artificially reduced by charitable subscriptions and grants out of national funds.

The other function of the Relief Committees was to give gratuitous aid in cases of extreme destitution, and this was well performed by them to the extent of their means. As the distress increased, the distribution of cooked food by the establishment of soup kitchens, was found the most effectual means of alleviating it. The attention of the committees was, therefore, generally directed to this object by the Inspecting Officers. Boilers were manufactured and sent to Ireland in great numbers, and Government donations were now in every case made equal in amount to the private subscriptions ('pound for pound'), and in cases of more than usual pressure, twice or three times that amount was given. This mode of giving relief was not found to be attended with any serious abuse. The committees expended in a great measure their own money, which made them more careful in seeing that it was laid out with the greatest possible advantage and economy; and as the ration of cooked food distributed by them was not an object of desire to persons in comfortable circumstances, as money wages were, it acted in a great degree as a test of destitution. The great defect of this system of relief was, that being voluntary, it could not be relied on to meet the necessities of a numerous population in a period of great emergency, and the difficulty of obtaining private subscriptions was often greatest in the most distressed districts.

The point at which we had arrived, therefore, at the commencement of the year 1847, was, that the system of public works, although recommended by the example of all former

occasions on which relief had been afforded to the people of Ireland in seasons of distress, had completely broken down under the pressure of this wide spread calamity; whilst the other concurrent system, which, on the principle of the Poor Law, aimed at giving relief, in the most direct form, out of funds locally raised, had succeeded to the extent to which it had been tried. The works were, therefore, brought to a close in the manner which has been already described: and it was determined to complete the system of relief by the distribution of food, to give it legal validity, and to place it more decidedly on the basis of the Poor Law. This was done by the passing of the Act 10 Vict. c. 7. A Relief Committee, composed of the magistrates, one clergyman of each persuasion, the Poor Law guardian, and the three highest rate-payers, was constituted in each electoral division*, the unit of Irish Poor Law statistics. A Finance Committee, consisting of four gentlemen, carefully selected for their weight of character and knowledge of business, was formed to control the expenditure in each union. Inspecting Officers were appointed, most of whom had been trained under the Board of Works and Sir R. Routh; and a Commission sitting in Dublin, of which Sir J. Burgoyne was the head, and the Poor Law Commissioner was one of the members, superintended the whole system. The expense was to be defrayed by payments made by the guardians out of the produce of the rates; and when this fund was insufficient, as it always proved to be, it was reinforced by loans, to be repaid by rates subsequently levied. Free grants were also made in aid of the rates in those unions in which the number of destitute poor was largest, compared with the means of relieving them, and when private subscriptions were raised, donations were made to an equal amount.

The check principally relied on, therefore, was, that the expenditure should be conducted either immediately or proximately out of the produce of the rates. No loan was to be made to any Board of Guardians until the Inspecting Officer had certified that they had passed a resolution to make the rate upon which it was to be secured, and that, to the best of his belief, they were proceeding with all possible despatch to make and levy such rate. This principle, although still imperfectly applied, and consequently irregular in its action, exercised a pervading influence over the working of this system of relief. In forming the lists of persons to be relieved, and making their demands upon the

* Two electoral divisions were sometimes united under one Relief Committee, but the accounts of each electoral division were kept separate.

Commissioners, few committees altogether rejected the idea that it was their own money which they were spending; and in some districts the farmer rate-payers assembled, and insisted on large numbers of persons being struck off the lists, who they knew were not entitled to relief. The tests applied to the actual recipients of relief were, that the personal attendance of all parties requiring relief was insisted on, exceptions being made in favour of the sick, impotent, and children under nine years of age, and that the relief was directed to be given only in the shape of cooked food, distributed in portions declared by the best medical authorities to be sufficient to maintain health and strength. The 'cooked food test'* was found particularly efficacious in preventing abuse; and the enforcement of it in some parts of the country cost a severe struggle. Undressed meal might be converted into cash by those who did not require it as food; and even the most destitute often disposed of it for tea, tobacco, or spirits; but stirabout, which becomes sour by keeping, has no value in the market, and persons were therefore not likely to apply for it, who did not want it for their own consumption. Attempts were made to apply the labour test to this system of relief; but, besides the practical difficulty of want of tools and proper superintendence, the Commissioners considered that, owing to the absence of any adequate motive, it would 'lead to 'a want of exertion on the part of the men which would perhaps 'be more demoralising than relief without any work.' It was therefore left to the Relief Committees in large towns and other situations favourable to such a mode of proceeding, to take their own course upon it; and the result was that some light kinds of labour, such as cleaning the streets and whitewashing the cabins, were exacted by a few of the more zealous and active committees. Relief in aid of wages was strenuously insisted on by many of the Relief Committees, and was steadily and successfully resisted by the Commission; but it was not considered right, in the administration of a temporary measure, to require the surrender of the land held by the applicant, provided he was proved to be at the time in a state of destitution.

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* The ration consisted of one pound of biscuit, meal, or flour; or one quart of soup thickened with meal, with a quarter ration of bread, biscuit, or meal. When bread was issued, one pound and a half was allowed. It was found by experience that the best form in which cooked food could be given was 'stirabout,' made of Indian meal and rice steamed, which was sufficiently solid to be easily carried away by the recipients. The pound ration thus prepared, swelled by the absorption of water to three or four pounds.

This system reached its highest point in the month of July 1847, when out of 2049 electoral divisions, into which Ireland is divided, 1826 had been brought under the operation of the Act, and 3,020,712 persons received separate rations, of whom 2,265,534 were adults, and 755,178 were children. This multitude was again gradually and peaceably thrown on its own resources at the season of harvest, when new and abundant supplies of food became available, and the demand for labour was at its highest amount; relief was discontinued to fifty-five unions on the 15th August, and the issues to the remaining unions entirely ceased on the 12th September. The latest date allowed by the Act for advances to be made, was the 1st October.

This was the second occasion on which upwards of three millions of people had been fed 'out of the hands of the magistrate,' but this time it was effectual. The Relief Works had been crowded with persons who had other means of subsistence, to the exclusion of the really destitute; but a ration of cooked food proved less attractive than full money wages, and room was thus made for the helpless portion of the community. The famine was stayed. The 'affecting and heart-rending crowds of destitutes'* disappeared from the streets; the cadaverous, hunger-stricken countenances of the people gave place to looks of health; deaths from starvation ceased; and cattle-stealing, plundering provisions, and other crimes prompted by want of food, were diminished by half in the course of a single month. The Commission closed amidst general applause, and 'Resolutions were 'received from many hundreds of the committees praising the 'conduct of the inspecting officers, and frankly and honourably 'expressing their gratitude to Government and the Legislature 'for the effective means afforded them for carrying out this 'benevolent operation.'† This enterprise was in truth the 'grandest attempt ever made to grapple with famine over a 'whole country.'‡ Organised armies, amounting altogether to some hundreds of thousands, had been rationed before; but neither ancient nor modern history can furnish a parallel to the fact that upwards of three millions of persons were fed every day in the neighbourhood of their own homes, by administrative arrangements emanating from and controlled by one central office.

The expense was moderate compared with the magnitude of

* Report from Count Strzelecki to the British Relief Association.

† Seventh and last Monthly Report of the Relief Commissioners.

‡ Letter from Sir John Burgoyne, quoted by the Chancellor of the Exchequer in the House of Commons.

the object. The amount at which it was originally estimated by the Commissioners was 3,000,000*l.*; the sum for which Parliament was asked to provide was 2,200,000*l.*, and the sum actually expended was 1,557,212*l.*, of which 146,631*l.* was paid to the Commissariat for meal supplied to the Relief Committees from the Government Depôts. The price of meal fortunately fell more than one-fifth during the progress of these operations, or from $2\frac{1}{2}d.$ a ration to less than 2*d.*, including all expenses of establishment.

The Finance Committees, which were selected bodies, consisting of from two to four gentlemen in each union, 'with rare 'exceptions acted with zeal and intelligence.'* The Relief Committees, a miscellaneous body composed of the foremost persons in each petty district, whoever they might be, showed, as was to be expected, every variety of good and bad conduct. In some cases the three highest rate-payers could not read, and even themselves established claims to be placed on the list of destitute for daily rations. It is a fact very honourable to Ireland, that among upwards of 2000 local bodies to whom advances were made under this Act, there is not one to which, so far as the Government is informed, any suspicion of embezzlement attaches.

In order to check the progress of the fever, which, as usual, followed in the train of famine, the Act 10 Vict. c. 22. was passed, by which the Relief Committees were empowered to attend to the proper burial of the dead, to provide temporary hospitals, to clear away nuisances, and to ventilate and cleanse cabins, the necessary funds being advanced by the Government in the same manner as the advances for providing food. These sanitary arrangements were extensively acted upon and at moderate expense. On the 17th August 326 hospitals and dispensaries had been authorised, with accommodation for more than 23,000 patients, with medical officers, nurses, ward-maids, &c. The additional expense incurred under this act, was 119,055*l.*, the whole of which was made a free grant to the unions, in aid of rates.

The state of the finances of some of the unions was a source of deep anxiety through the winter and spring of 1846–7. Rates were not collected sufficient to defray the current expenses of the workhouses of these unions, and the guardians threatened to turn the inmates into the street, if assistance were not given from the public purse. The dilemma was a painful and perplexing one. There was no reason to doubt the readiness of

* Third Report of the Relief Commission.

some of the persons who held this language to put their threat into execution; while to admit the claim might bring upon the Government the greater number of the workhouses in addition to the whole of the outdoor relief; in other words, would transfer to national funds a burden intended by law to be local, and not likely to be administered with economy on any other footing. Important aid was, however, given. Large supplies of clothing were collected from the stores of the army and navy, and sent to Ireland for the use of the workhouses. Small sums of money, amounting in the aggregate to 23,503*l.*, were lent from time to time with a sparing hand to assist the guardians in providing food and clothing in the most pressing and necessitous cases; 4479*l.* was expended in providing proper medical inspection and superintendence in localities in which great sickness prevailed; and 60,000*l.* was advanced for the enlargement of the workhouses, principally by the erection of fever-wards.

The improvement of the Fisheries on the western coast of Ireland has always been an object much pressed upon the Government. In order to give the fishermen a motive for exertion, and set them an example of improved modes of preparing the fish for sale, experienced curers were obtained from the Fishery Board in Scotland; six stations were formed, at which fish are purchased at a fair market-price, cured, and sold again for consumption to the highest bidder; and supplies of salt and tackle were provided for sale to the fishermen. This was done without any expense to the public, by means of a sum of 5000*l.* placed at the disposal of the Government out of the balance of the subscription for the relief of Irish distress in 1822.

The plan of making small loans to fishermen to enable them to equip themselves for their trade was not resorted to, because experience had proved that the fishermen are induced by it to rely upon others, instead of themselves, and that they acquire habits of chicanery and bad faith in their prolonged struggle to evade the payment of the loans. Sir J. Burgoyne had authority given him by the British Relief Association, to apply 500*l.* to this object, and he induced the Relief Committee of the Society of Friends to take up the same cause. 'I have made,' he states, 'many inquiries for the purpose, but I have always made it a 'point that there should be a decided prospect of any advances 'being repaid, and here the matter hangs. The officers all 'report that they doubt being able to get the money back; and 'I think it so necessary to be firm on this point, that I have not 'made use of a penny of the 500*l.*, and have recommended the 'Friends to reserve their funds also for a better mode of ex-'pending them.' Since then, the Society of Friends, who are

able to give a more particular attention to such subjects than it is possible for the Government to do, have done much good by assisting poor fishermen to redeem their nets and other implements of their trade, which they had pawned during the season of extreme distress; and these excellent people have also adopted an admirable plan of providing good boats and all requisite gear, with a competent person to instruct the native fishermen, who are formed into companies or partnerships and work out the value of the boats, &c., of which they may then become the owners. A large supply of seamen's jackets and trousers, obtained from the Admiralty, was delivered to the Society of Friends, for distribution among the poor fishermen on the west of Ireland.

From the first failure of the potato crop in 1845, the subject of providing seed was repeatedly considered, and the conclusion invariably arrived at was, that the moment it came to be understood that the Government had taken upon itself the responsibility of this delicate and peculiar branch of rural economy, the painful exertions made by private individuals in every part of Ireland to reserve a stock of seed would be relaxed, and the quantity consumed as food in consequence of the interference of the Government, would greatly exceed the quantity supplied by means of that interference. The Government therefore never undertook to supply any kind of seed already in extensive use; but Holland was had recourse to for flax and rye seed, Scotland for the hardy description of barley called bere, and England and the neighbouring continental countries for turnip, carrot, beet-root, and other vegetable and green-crop seeds; all of which were sent to Ireland for sale at low prices, and latterly for gratuitous distribution. More than thirteen tons of turnip seed, belonging to the Government and the British Relief Association, were distributed in the county of Mayo alone*, besides 125 hogsheads of flax seed, by which means, in addition to the present supply of food obtained, a foundation was laid for an improved system of agriculture by a rotation of crops. One of the remedial measures proposed by the Government at the commencement of the parliamentary session of 1847, was to

* The small holders in the barony of Erris, in this county, declined at first to accept the seed which was offered them, saying that if they sowed it, the crops would be seized by their landlords. This was not believed at the time in England, but it has, nevertheless, turned out perfectly true. This barony, of which Belmullet is the principal place, is the darkest corner of Ireland. In some instances broken landowners and their families were receiving rations, while their tenants were starving.

make loans to landed proprietors to the aggregate amount of 50,000*l.* to enable them to provide their tenants with seed, which loans were to have been repaid out of the produce of the crops raised from the seed; but nobody availed himself of this boon. The objections which exist to the Government leaving its province to interfere in the ordinary business of private life, were in nothing more clearly demonstrated than in what took place in reference to this subject. The accidental detention, by contrary winds, of a vessel laden with rye and bere seed, called forth expressions of anger and disappointment from various parts of the west and south of Ireland which had depended upon this supply; and the unfounded belief that the Government had entered upon a general undertaking to provide seed-corn, largely contributed to that criminal apathy which was one of the causes of large tracts of land being left waste in 1846–7. On the other hand, it was found, when inquiries were made for vegetable seeds in the spring of 1847, that every ounce of parsnip seed in the London market had been already bought up and sent to Ireland; which is only one instance among many that might be adduced, of the reliance which may be placed on private interest and enterprise on occasions of this sort.*

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* The following interesting account of what took place in the county of Clare on the subject of seed, is extracted from Captain Mann's narrative:—

'The first supply of seed sent for distribution by sale, was received on the 13th March last, up to which period the prospect of the tillage of the land being neglected, was very alarming. The seed-grain had been in most cases either partially or wholly consumed for food. Bad advice had been given, that the government or the landlords would be forced into assisting — the former to pay wages for the time while the work was going on, and the latter to provide seed, if the government would not. The supply alluded to was bere and rye. By dint of persuasion, and having it published by the Roman Catholic clergy, the quantity sent was taken and planted; and here let me add, that the most sanguine could not have anticipated the great benefit of this importation. The value of the bere, as an early crop and produce, exceeded every expectation. It was reaped and in the market the latter part of July; and, as compared with other barley, it is stated to me, thrashed out five stone to the barb, of twenty hand-sheafs, while the other only yielded three stone from the same quantity. The rye grew on bog merely burnt, and that even slightly; in some cases the heather being in bloom where the rye in the same ground was ripe. Thus hundreds of acres were cultivated that might have lain waste; and as the rye-meal brought by the "Sisters" from St. Petersburgh to this depôt, and issued as rations, became, after some opposition, popular with the poor, it does not require any remark to show

There is still another measure which does not the less deserve to be mentioned because it ended in failure. The Act 9 & 10 Vict. c. 109., passed at the close of the session of 1846, had appropriated a sum of 50,000*l.* to be granted in aid of public works of acknowledged utility, one-half of the expense of which was to be provided for by a loan, and another portion was to be

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the value and importance of this article, when considered as an auxiliary substitute for the potato food; and the more so because it can be grown on inferior land here, and not like the Indian corn-meal, which we are forced to look to other countries for.

'The supply of green crop and oat-seed by her Majesty's ship "Dragon" was received here the 12th April last. Some few landlords purchased of the first, and supplied their tenantry, but of the latter but little was purchased at that time. The feeling still existed that the government or the landlords would be forced into providing seed, and assisting the tillage; but when that vessel sailed, and they became convinced to the contrary, the most pressing and even distressing applications were made to me by the people to procure a supply of any seed; the fact being clear that grain-seed (oats and barley) was not to be procured. Most fortunately, in a few days after, the hired steamer "Doris" arrived with her cargo of oat-seed, the greater part of which was freely purchased, and a vast quantity of land immediately tilled. A sudden and favourable reaction took place, all appearing anxious to raise something, and not let the land run to waste. Turnip-seed was imported by dealers to a very large amount; and those who could bought and sowed it. Subsequently a small quantity was sent to me for gratuitous distribution. Lists of the parties who received it, and the quantities allotted, are herewith annexed; and to this were added some small pamphlets given to me by Lord Robert Clinton, my object being to assist the poor, and spread the benefit over the greatest possible extent.

'I have now the pleasure to state, that instead of this part of the country being as described in the first series, with respect to green crops, the turnip particularly has become a general produce with even the poorest. Quantities are daily exposed for sale in the markets, and with a mixture of Indian corn-meal, rice, or flour, it is used as a substitute for bread. Emulation has been excited; and a few days since I was invited to view an exhibition at Colonel Vandeleur's, of the following:—

	Stone.	Lbs.			Lbs.
3 Swedish turnips	- 4	0	weight.	Heaviest of the three	20
3 White ditto -	- 3	11	„	Ditto - - -	20
3 Mangel wurzel	- 3	8	„	Ditto - - -	18

Beside white carrots, &c. Experiments have been tried with the potato set in drills very successfully; and I do trust that improvement will make further progress under the system of instruction which it is said will be adopted.'

contributed in cash by the persons principally interested in the works. No application was made to participate in the advantage of this arrangement, and the 50,000*l.* was therefore transferred in the next session of Parliament to the erection of Fishery Piers and other useful objects.

The qualities displayed by the officers intrusted with the conduct of these great operations, will always be regarded as a bright spot in the cloud which hangs over this disastrous period. The nation had never been better served. The administrative ability which enabled Sir R. Routh to dispose, without hurry or confusion, of masses of business which to most persons would have been overwhelming; the stoutness of heart with which Colonel Jones commanded, and ultimately disbanded his army of 740,000 able-bodied Irishmen; the admirable sagacity displayed by Sir J. Burgoyne in coming to a safe practical decision upon perplexed social questions, then perhaps for the first time presented to him; the remarkable financial ability of Mr. Bromley, the accountant to the Relief Commission; the cordial co-operation of Admiral Sir Hugh Pigot and his able secretary, Mr. Nicholls, and the valuable assistance rendered in many different ways by Colonel Mac Gregor, the head of the constabulary force, proved that, however great the crisis might be, the persons in chief trust were equal to it.* But the most gratifying feature of all, was the zeal and unanimity with which the large body of Officers employed devoted themselves to this labour of love†, although they had been suddenly brought together for this particular occasion from many different branches of the public service, or from the retirement of private life. It may truly be said of them, that they 'offered themselves willingly 'among the people;' and several painful casualties from the prevailing fever, and the failing health of others, showed that the risks and hardships attending this service were of no ordinary

* The readiness with which the Bank of Ireland, and the Provincial, National, and other banks, undertook the office of Treasurer to the Finance Committees, and entered into every proposed detail and accommodation, in support of the operations of the Commissariat, the Relief Commission, and the Board of Works, is very creditable to the managers, and deserves the thanks of the public.

† All the letters and proceedings of these officers showed that their predominant feeling was an anxious desire to fulfil the benevolent mission on which they had been sent. One observed that he could bear anything but the 'careless misery of the children;' another that his heart was broken by the sobs of the women returning to their homes with a smaller quantity of food than was sufficient for the support of their families.

kind. The officers and men belonging to the numerous ships-of-war employed in the 'Relief Service,' entered with characteristic spirit upon duties which indicated in a more direct manner than ever before, that the real object of their noble profession is not to destroy men's lives, but to save them; and it was creditable to their seamanship, as well as their humanity, that the dangers and hardships attending their incessant employment on the exposed western coasts of Ireland and Scotland during the stormy months of winter, did not lead to the loss of a single vessel.*

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* The Four Commissions employed on these operations were composed as follows:—

The Board of Works.

Lieut.-Col. H. D. Jones, R.E., Chairman.
Richard Griffith, Esq., Deputy Chairman.
John Radcliff, Esq.
Wm. Thos. Mulvany, Esq. } Commissioners.
Captain Larcom, R.E.

The First Relief Commission, appointed by Sir Robert Peel's Government.

Rt. Hon. E. Lucas, Chairman (afterwards retired).
Com.-Gen. Sir R. I. Routh (afterwards Chairman).
Colonel D. M'Gregor.
Lieut.-Col. H. D. Jones, R.E.
Sir James Dombrain.
Professor Sir Robert Kane.
E. T. B. Twisleton, Esq.
Theobald M'Kenna, Esq.

The Second Relief Commission, appointed by Lord John Russell's Government.

Major.-Gen. Sir J. F. Burgoyne, K.C.B., Chairman.
T. N. Redington, Esq.
E. T. B. Twisleton, Esq.
Com.-Gen. Sir R. I. Routh.
Lieut.-Col. H. D. Jones, R.E.
Colonel D. M'Gregor.

The Poor Law Commissioners in Ireland.

E. T. B. Twisleton, Esq.
Rt. Hon. Sir W. M. Somerville, Bart.
T. N. Redington, Esq.

Sir Randolph Routh was in charge of the Commissariat from the commencement to the end of the measures of relief.

It is due to Mr. Redington to state that his intimate acquaintance with Ireland, and excellent judgment, have been a never-failing ground of reliance in the most difficult emergencies.

A slight reference to the exertions which had to be made for the single object of conducting and checking the expenditure, will give some idea of the magnitude and difficulty of the task which was imposed on the officers of the Crown.

In establishing a system of Relief Works, intended to bring employment to every man's door, it was impossible to avoid creating an extensive staff for the superintendence and payment of the labouring poor. Very voluminous accounts suddenly poured into the Office of Works from all parts of Ireland; and as the lives of thousands depended upon the supply of funds, it became a duty of the first importance to insure their immediate distribution over the whole surface of the country. Remittances were made to about 600 pay clerks weekly, and it was often found necessary to transfer from one to the other sums of money upon the authority of local officers, whereby an intermixture of accounts of a very intricate description took place. The weekly accounts sent to the office at Dublin exceeded 20,000, and the pay lists were more than a quarter of a million in number, the expenditure being at one time at the rate of a million a-month. To watch the distribution of such large sums would have been a gigantic task, even for a long-established and well-organised department, but for a temporary establishment, composed, for the most part, of persons with little, if any, previous knowledge of business, the duty was one of unprecedented difficulty, and it is a matter of surprise that greater irregularity was not the consequence.

In the books of the temporary Relief Commission it was found necessary to open accounts with more than 2000 bodies intrusted with the expenditure of public money; and such was the rapidity of the service, that within a period of five months, more than 19,000 estimates were received in the accountant's office, and acted upon, with a like number of accounts, which were registered for examination, and more than 17,000 letters were received and answered. The pecuniary transactions of this commission were not with public officers, but with ephemeral bodies composed of persons generally unused to business, and almost irresponsible; but the utmost good faith prevailed; and by requiring an immediate account, with vouchers, every fortnight, of the disbursement of the previous amount remitted, with the balance remaining on hand, before a further supply was sent down, the best control upon the expenditure was established, and the result has been the great saving (more than half a million) effected, while scarcely an instance of misappropriation has occurred. It has also been admitted in many parts of Ireland, that these accounts, and the instructions for

their preparation, have induced habits of business that never before existed, while at the same time they have urged the Stamp Laws into more active operation.

The prompt examination and audit of the accounts of the Board of Works, the Commissariat, and the Relief Commission, was provided for by the deputation of experienced persons from the offices in London, under whose superintendence the whole of the expenditure has been subjected to a searching local revision, and wherever any symptom of malversation has appeared, the matter has been probed to the bottom.

It has been a popular argument in Ireland, that as the calamity was an imperial one, the whole amount expended in relieving it ought to be defrayed out of the public revenue. There can be no doubt that the deplorable consequences of this great calamity extended to the empire at large, but the disease was strictly local, and the cure was to be obtained only by the application of local remedies. If England and Scotland, and great part of the north and east of Ireland had stood alone, the pressure would have been severe, but there would have been no call for assistance from national funds. The west and south of Ireland was the peccant part. The owners and holders of land in those districts had permitted or encouraged the growth of the excessive population which depended upon the precarious potato, and they alone had it in their power to restore society to a safe and healthy state. If all were interested in saving the starving people, they were far more so, because it included their own salvation from the desperate struggles of surrounding multitudes phrenzied with hunger. The economical administration of the relief could only be provided for by making it, in part at least, a local charge. In the invariable contemplation of the law, the classes represented by the rate-payers have to bear the whole burden of their own poor; the majority of the British community did so bear it throughout this year of distress; and, besides fulfilling their own duties, they placed in the hands of the minority the means of performing theirs, requiring them to repay only one-half.

A special objection has been raised to the repayment of the advances for the Relief Works, on the ground that their cost exceeds that for which they could now be constructed. The answer to this is, that these works were undertaken solely for the purpose of giving employment in a great emergency, when it was impossible for them to be executed with the same care and economy as in ordinary times*; that the counties are there-

* One of the principal causes of the expense incurred, was the pressure to find work for every person in the neighbourhood of his

fore chargeable with them, not as works, but as relief; and that if they had cost either half as much, or twice as much as they did, the liability would have been the same. But when it is remembered that the expensive character of the works was in a great degree owing to the Board of Works not having received from the Presentment Sessions and the Relief Committees that assistance in keeping down the expenditure, which it was the duty of those bodies to have rendered, both by making a proper selection of the works to be undertaken, and by confining their recommendations for employment on them to those persons who were really destitute, it is a matter of surprise that any answer has been rendered necessary.

We should probably have heard less of these repayments if it had been generally known what their real amount is. The sum expended under the first Relief Works Act (9 & 10 Vict. c. 1.) was 476,000*l.*, one half of which was grant, and the other half is to be repaid by twenty half-yearly instalments, amounting on an average, including interest, to about 12,500*l.* each.* The expenditure under the second act (9 & 10 Vict. c. 107.) was about 4,850,000*l.*, half of which was remitted, and the other half is repayable by similar instalments of 145,500*l.* each, including interest. The annual addition made to the rates by the repayments under the two acts relating to the Relief Works is therefore about 316,000*l.*†; while, by an act passed on the 28th of August, 1846, the rates were relieved from an annual payment of 192,000*l.*, being the remaining half of the expense of the constabulary, the other half of which was already defrayed out of national funds. The additional charge upon the rates, therefore, amounts only to 124,000*l.* a-year for ten years, or 1,240,000*l.* in all. The sum advanced under the 9 & 10 Vict. c. 2., on the security of grand jury presentments, was 130,000*l.*, which will have to be repaid in various periods, extending from three to ten years; but the expenditure under this act was merely in anticipation of the usual repairs of the

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own home, which added greatly to the number of the works, and to the proportion of them left unfinished.

* The first instalments due under the 9 and 10 Vict. c. 1 & 2. have been already paid.

† Viz., 25,000*l.*, being the aggregate of the two half-yearly instalments under the 9 and 10 Vict. c. 1; and
291,000*l.*, the same under the 9 and 10 Vict., c. 107.

Total 316,000*l.*

public roads, the cost of which is, in ordinary years, raised within the year without any advance. Lastly, the sum expended in the distribution of food under the 10 Vict. c. 7., and in medical relief under the 10 Vict. c. 22., was 1,676,268*l.*, of which 961,739*l.* is to be repaid, and the remaining 714,529*l.* is a free grant. The first-mentioned act included a fund for making grants as well as loans, and the demands for repayment have been adjusted as nearly as possible according to the circumstances of each district. In some of the western unions, where the amount of destitution bears the largest proportion to the means of the rate-payers, and, owing to the extent to which the potato was formerly cultivated, a painful period of transition has yet to be endured, only a small part of the sum expended is required to be repaid *; while in other unions where the return of low prices has restored society to its ordinary state, grants have been confined to those cases in which the expenditure has exceeded a rating of three shillings in the pound on the valuation.

All the claims of the Exchequer, arising out of the relief operations of 1846 and 1847 have now been described, and it must be borne in mind that the several localities received full value for what they have to pay. They were saved from a prolonged and horrible state of famine, pestilence, and anarchy, which was the main consideration; and they had, besides, the incidental advantage of the labour bestowed upon the roads and other public works, especially in the poor and wild districts of the west, where lines of road have been opened, with the aid of the relief grants and loans, which, although much wanted, could not have been undertaken for years to come without such assistance. The rest of the expenditure, including the large donations made to relief committees previously to the passing of the

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* The proportions in which the expenditure was made a local or general charge in the following unions, were —

		Loan to be repaid.	Grant in aid of rates.
County of Mayo	Ballina	£13,716	£43,610
	Ballinrobe	12,183	27,997
	Castlebar	7,282	19,313
	Swineford	6,620	31,797
	Westport	5,624	37,993
„ Galway	Clifden	3,228	8,868
	Gort	7,663	18,475
„ Clare	Scariff	6,406	10,943
„ Cork	Bantry	6,079	12,294
	Skibbereen	13,451	21,627
„ Kerry	Kenmare	3,359	10,956

Act 10 Vict. c. 7., the cost of the staff of the Board of Works and of the Relief Commission, the Commissariat Staff, and the heavy naval expenditure, has been defrayed out of the public purse, without any demand for repayment.

Hitherto our narrative has been confined to what was done by the Government, but the voluntary exertions of private individuals contributed their full share towards this unprecedented act of public charity. The Society of Friends were, as usual, first in the field of benevolent action. A subscription was opened by them in London in November 1846; members of the Society were sent on a deputation to Ireland, and those who resided there aided by their personal exertions and local knowledge. On the 6th January, 1847, a committee, of which Mr. Jones Loyd was chairman, and Mr. Thomas Baring and Baron Rothschild were members, invited contributions under the designation of the 'British Association for the Relief of extreme 'Distress in Ireland and the Highlands and Islands of Scotland.' On the 13th of January, 1847, a Queen's letter was issued with the same object, and the 24th of March was appointed, by proclamation, for a General Fast and Humiliation before Almighty God, 'in behalf of ourselves and of our brethren, who, in many 'parts of this United Kingdom, are suffering extreme famine 'and sickness.' A painful and tender sympathy pervaded every class of society. From the Queen on her throne to the convicts in the hulks, expenses were curtailed, and privations were endured, in order to swell the Irish subscription. The fast was observed with unusual solemnity, and the London season of this year was remarkable for the absence of gaiety and expensive entertainments. The vibration was felt through every nerve of the British empire. The remotest stations in India, the most recent settlements in the backwoods of Canada, contributed their quota, and 652*l.* was subscribed by the British residing in the city of Mexico, at a time when their trade was cut off, and their personal safety compromised by the war with the United States. The sum collected under the Queen's letter was 171,533*l.* The amount separately contributed through the British Association was 263,251*l.**; and this ag-

* The following are some of the most remarkable contributions:—

	£	s.	d.
Her Most Gracious Majesty the Queen - -	*2000	0	0
H. R. H. Prince Albert - - - -	500	0	0

* Her Majesty also contributed 500*l.* to the 'British Ladies Clothing Fund.'

gregate amount of 434,784*l.* was divided in the proportion of five sixths to Ireland, and one sixth to Scotland. But besides

	£	*s.*	*d.*
Her Majesty the Queen Dowager	1000	0	0
His Majesty the King of Hanover, as Duke of Cumberland and Chancellor of the University of Dublin	1000	0	0
His Imperial Highness the Sultan	1000	0	0
The East India Company	1000	0	0
The Corporation of the City of London	1000	0	0
The Bank of England	1000	0	0
The Duke of Devonshire	1000	0	0
The Worshipful Company of Grocers	1000	0	0
Messrs. Jones, Lloyd, and Co.	1000	0	0
„ Rothschild and Co.	1000	0	0
„ Baring Brothers and Co.	1000	0	0
„ Truman, Hanbury, and Co. (including 50*l.* from their clerks, and 8*l.* 10*s.* from their workmen)	1163	10	0
„ Smith, Payne, and Smiths	1000	0	0
„ Overend, Gurney, and Co.	1000	0	0
An English Friend, two Donations	1004	0	0
An Irish Landlord, for Skibbereen	1000	0	0
Manchester and Salford Relief Committee	7785	0	0
Newcastle and Gateshead ditto	3902	0	0
Hull ditto	3800	0	0
Leeds ditto	2500	0	0
Huddersfield ditto	2103	0	0
Wolverhampton ditto	1838	0	0
York ditto	1700	0	0
Cambridge University and Town, including 617*l.* 10*s.* from Trinity College, and 500*l.* collected at the Baptist Chapel in St. Andrew Street	2706	0	0
Oxford University and City	1770	0	0
Proceeds of a Ball at Florence given by the Prince de Demidoff at San Donato, besides 500*l.* from the Florence Relief Committee, and 9*l.* 13*s.* 9*d.* from the English servants at Florence	891	17	2
St. Petersburg	2644	0	0
Constantinople	620	0	0
Amsterdam: collections in the English Church	561	0	0
Denmark; partly collected by Parish Priests in the provinces	504	0	0
Malta and Gozo	720	0	0
Remittances from British Guiana, the result of public subscription	3000	0	0
Nova Scotia, including a vote of 2250*l.* by the House of Assembly	2915	0	0
Barbadoes Relief Committee	2575	0	0

this great stream of charity, there were a thousand other channels which it is impossible to trace, and of the aggregate result of

	£	s.	d.
Jamaica, including a vote of 525*l.* by the House of Assembly	1537	0	0
Trinidad	1350	0	0
Newfoundland	868	0	0
St. Lucia	614	0	0
Grenada	564	0	0
St. Christopher; vote of the Legislature of the Island	505	0	0
Bermuda; vote of the House of Assembly	500	0	0
Hobart Town	500	0	0
Bombay	9000	0	0
Madras	2150	0	0
Remittance from the Mauritius, including 111*l.* 16*s.* 11*d.* from the Seychelles Islands, and 16*l.* 7*s.* from Rodrigues, and in addition to 2211*l.* 13*s.* collected by the Vicar Apostolic, and sent direct to Ireland. (The amount subscribed at the Seychelles Islands, and at Rodrigues, is very remarkable, when the poverty of their inhabitants is considered)	3020	0	0
Collection at Basseterre, St. Kitts, from Negroes belonging to the Congregation under the charge of the Moravian Missionaries, per Rev. G. W. Westerley	15	17	10
Officers and crew of her Majesty's ship 'Hibernia'	167	17	11
Contribution by the Governor, Commissioner, Lieutenant-Governor, and officers of Greenwich Hospital, being the sum allowed them for a festival dinner in commemoration of the battle off Cape St. Vincent	40	0	0
The 2d Regiment of Life Guards	156	4	6
A diamond cross from a lady (realised)	42	0	0
Workmen employed by Sir John Guest at the Dowlas Iron Works	176	17	10
Metropolitan Police	161	0	0
Proceeds of two amateur performances at the St. James's Theatre	1413	0	0
Collected on board the British and North American Royal Mail steamer 'Hibernia,' for Ireland	51	12	8
Wesleyan Methodists; part of the first distribution of collections in various chapels	5000	0	0
Members of the London Daily Press, chiefly Reporters and Compositors, in addition to other contributions	88	18	0
Proprietors of the 'Morning Herald' and 'Daily News,' each	100	0	0
'Punch'	50	0	0

Many of the smaller subscriptions, such as 800*l.* from the town of Bridgewater, and 747*l.* from the Bahamas, are more remarkable in proportion to the means of the contributors, than many of those which have been mentioned.

which no estimate can be formed. There were separate committees which raised and sent over large sums of money. There were ladies' associations without end to collect small weekly subscriptions and make up clothes to send to Ireland. The opera, the fancy bazaar, the fashionable ball rendered tribute; and, above all, there were the private efforts of numberless individuals, each acting for himself and choosing his own almoners, of which no record exists except on High. Upon application being made to the managers of the Provincial Bank of Ireland to permit English charitable remittances to pass without the usual charge, it turned out that they had been in the habit of doing so for a considerable time past, and that the amount sent through that one channel, in the six months ending on the 4th March, 1847, exceeded 20,000*l.* In the contemplation of this great calamity, the people of the United States of America forgot their separate nationality, and remembered only that they were sprung from the same origin as ourselves. The sympathy there was earnest and universal, and the manifestations of it most generous and munificent. The contributions from this land of plenty consisted principally of Indian corn, and other kinds of provisions, and the cargoes were, for the most part, consigned to the Society of Friends, whose quiet, patient, practical exertions commanded universal confidence. The freight and charges on the supplies of food and clothing sent to Ireland by charitable societies and individuals, as well from the United States and Canada on the one side, as from England on the other, were paid by the Government, to an amount exceeding 50,000*l.**:

The officers and men of the Coast Guard raised a fund amounting to 429*l.*, which was expended by the members of the force in Ireland in giving relief in the neighbourhood of their respective stations. From the commencement of the distress the Coast Guard has been distinguished for its active benevolence.

The National Club in London collected a sum of 17,930*l.*, 1000*l.* of which was from various congregations at Brighton, 500*l.* from an anonymous contributor, and 500*l.* from the Wesleyan Irish and Scotch Relief Committee. This fund was intrusted for distribution to the clergy of the Established Church in Ireland, acting under a committee appointed for each diocese, headed by the bishop.

The amount collected by the London Committee of the Society of Friends was 43,026*l.*, nearly the whole of which was disbursed through the Dublin Friends' Committee.

* Two United States ships of war, the 'Jamestown' and 'Macedonian,' were manned by volunteers, and sent to Ireland and Scotland with the following charitable supplies, for which no claim for freight was made. These two cargoes will serve as a specimen of the rest.

all custom dues were remitted, and the meal and other articles were to a great extent taken charge of by the officers of the

'JAMESTOWN.

Corn and Grain.	qrs.	bshl.		qrs.	bshl.
Wheat -	- 4	0	Peas - - -	30	0
Barley -	- 3	4	Beans - - -	279	3
Oats - -	- 2	4	Indian Corn or Maize	339	2
Rye - -	- 9	2			

Meal and Flour.	cwt.	qrs.	bshl.
Wheat Meal or Flour - -	96	1	0
Barleymeal, Oatmeal - - -	19	2	16
Indian Corn Meal - -	4229	3	0

	cwt.	qrs.	bshl.		cwt.	qrs.	bshl.
Rice - -	154	1	4	Pork - -	707	0	16
Bread and Biscuit	1048	3	21	Hams - -	291	3	4
Potatoes - -	61	1	1	Fish - -	4	0	0
Apples, dried -	0	0	6	Clothing	10 cases, 18 barrels.		

'MACEDONIAN.'

Landed in Ireland.

Indian Corn Meal, 5324 barrels at 196 lbs. each - - - - -	1,043,504 pounds.
Rice, equal to 217 tierces, at 6 cwt. each -	145,824
Beans, 6 tierces of 4 cwt., 66 bbls. of 196 lbs., 38 bags of 100 lbs. - -	19,424
Peas, 53 bbls. of 196 lbs., 100 bags of 100 lbs. each - - - -	11,388
Indian Corn, 38 bags of 100 lbs. - -	3800
Wheat, 1 bag - - - -	100
Salt Pork, 1 barrel - - -	200
Pounds	1,224,240 = $546\frac{1200}{2240}$ tons.

Besides 100 barrels Indian Corn Meal and three packages of Clothing, landed as a private consignment to the Rev. Mr. Taylor.

Clothing, 13 boxes, 3 bales, 3 barrels - - 19 packages.

Landed in Scotland.

1 package clothing,	133 bags oats,
1 barrel beef,	2 barrels beans, and
143 barrels meal,	8 chests of tea.

Of which the Glasgow Section received —

1 package clothing,	133 bags oats, and
1 barrel beef,	8 chests tea.
37 barrels meal.	

Commissariat, and held by them at the disposal of the parties to whom they had been consigned for distribution; by which means the necessary harmony was preserved between the operations of the Government and those of the private associations, and the bounty of the subscribers reached the destitute persons for whom it was intended, with as small a deduction as possible for incidental expenses. Thus, when the British Association was desirous of giving the cultivators on the Western Coast of Ireland an opportunity of purchasing seed at a low market price at the close of the sowing season of 1847, five large steamers were collected by the Government, which were loaded in a remarkably short space of time, with oats and other seed provided by the Association, and were sent forth, each to its appointed section of the Western Coast, so that every harbour accessible to a steamer, from Kinsale to Londonderry, was looked into, and what remained unsold was left in the Government depôts for subsequent sale or gratuitous distribution. On the other hand, the Government received much assistance and support from the operations of these benevolent societies, and they were especially useful in bridging over the fearful interval between the system of relief by work and relief by food. Several gentlemen, with a noble self-devotion, volunteered their services to the British Association, among whom Lord Robert Clinton, Lord James Butler, Count Strzelecki, and Mr. Higgins, were distinguished by their zeal and ability, and by the fortitude with which, for months together, they endured the pain and risk attending the immediate contact with hunger and disease.

A large committee, with the Marquis of Kildare at its head, was formed in Dublin under the name of the 'General Central 'Relief Committee for all Ireland,' the contributions received by which amounted to upwards of 50,000*l.*, independently of 10,000*l.* in cash and an equal value in food, intrusted to this committee from the sum raised by the Queen's Letter. British North America contributed through this medium the munificent sum of 12,463*l.*, including 5873*l.* from Montreal; 1571*l.* from Quebec; and 3472*l.* from Toronto. The United States gave 5852*l.*, of which 3199*l.* was from New Orleans. British India, 5674*l.*; the Cape of Good Hope, 2900*l.*; Australia, 2282*l.*; South America, 772*l.*; the Military, 386*l.*; Scotland, France,

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The Edinburgh Section received —

100 barrels meal; and 6 barrels meal and 2 barrels beans were delivered to Mr. Mathieson, of Stirling, as instructed by the manifest.

Germany, Italy, Belgium, Gibraltar, the Channel Islands, West Indies, the Ionian Islands, &c., 2168*l.*; Ireland, independently of local subscriptions, which were very considerable, 9888*l.*; and England, over and above the 20,000*l.* remitted from the produce of the Queen's Letter, 8886*l.*

Subscriptions were received to a smaller amount, but from an earlier period of the distress, by another Committee established in Dublin under the name of the Irish Relief Association for the Destitute Peasantry, which was announced to be a re-organisation of the association formed during the period of famine in the west of Ireland in 1831. The list of patrons commenced with the names of the Archbishop of Dublin and the Duke of Manchester, and, independently of some cargoes of corn, flour, &c., from Canada and the United States, the funds placed at their disposal amounted to nearly 42,000*l.*, among the contributions to which, the following were conspicuous: — England, 17,782*l.*; Ireland, 6151*l.*; France, 1390*l.*; Italy, including 1481*l.* from Rome, 2708*l.*; British North America, 2821*l.* (1165*l.* of this being from Quebec); United States, 847*l.*; India, 5947*l.*, of which the large proportion of 4981*l.* was from Madras; West Indies, 1043*l.*; Australia, 2314*l.*; and from the officers and men of various regiments, and the pensioners and constabulary, 508*l.*

But the most considerable of the Dublin Charitable Committees, was that composed of members of the Society of Friends, of which Mr. Joseph Bewley and Mr. Jonathan Pim were the secretaries. The contributions placed at their disposal since the 3d of December, 1846, in money and provisions, have been to the amount of upwards of 168,000*l.*, of which no less than 108,651*l.* is the estimated value of provisions (7935 tons) consigned to them from the United States of America. Of the subscriptions in money, 35,393*l.* was paid in by the London Committee of the Society of Friends; 8494*l.* by Members of the Society and others in Dublin; and the large sum of 15,567*l.* by persons residing in the United States. The provisions received from America were as follows: —

	Tons	Estimated Value. £	s.	d.
From New York -	4496 -	58,299	15	0
„ Philadelphia -	1870¼ -	24,948	18	0
„ New Orleans -	349 -	7538	5	0
„ Newark, N. I. -	316¾ -	5141	0	0
„ Baltimore -	262½ -	3913	10	0
„ Richmond, V. -	252½ -	3486	15	0
„ Charleston -	169 -	2362	0	0

	Tons.	Estimated Value. £	s.	d.
From Alexandria, V. -	102 -	1422	10	0
„ Sundry other Ports, United States, America	117 -	1518	7	10

And in addition to these large donations of money and food, consignments of clothing were received from England and America, to the estimated value of from 5000*l.* to 10,000*l.*

The ladies of Ireland exerted themselves with characteristic zeal and benevolence, to alleviate the sufferings of their country-people, and to promote their moral advancement, by awakening and encouraging a spirit of independent exertion, and fostering habits of industry and self-reliance. The 'Ladies' Relief Association for Ireland,' in the management of which the Honourable Mrs. Newcome takes the principal part, and the objects of which are 'to encourage industry among the female peasantry of Ireland, to contribute towards providing nourishment for the sick, and to procure clothing for the destitute,' raised 11,465*l.* previously to the 1st of August 1847, of which 3043*l.* was derived from the proceeds of a Fancy Bazaar in London; and of this sum, 2500*l.* was appropriated to the relief of families whose husbands or fathers 'have been removed while performing their painfully laborious duties.' The 'Ladies' Industrial Society for the encouragement of remunerative labour among the peasantry of Ireland,' of which Mrs. Lloyd is the active promoter, more particularly aims at encouraging the manufacture of those articles which are likely to find a ready sale in the trade; for which purpose, instruction is given in the best and most practicable descriptions of remunerative labour; patterns, models, and implements are furnished; and the means of sale are provided for the produce, through the intervention of a mercantile agency in Dublin. Numerous benevolent persons adopted the same course in various parts of Ireland, sometimes in connexion with these societies, and sometimes using their own means, with such aid as was sent to them by their private friends. Mr. Gildea, the rector of Newport, and the ladies of his family, revived the manufacture of coarse linen at that place, and they have employed between 500 and 600 females since the beginning of January, in the execution of orders sent them by charitable persons.* The ladies of the Presentation

* Nearly 3000*l.* was remitted to Mr. Gildea in advance, in sums of from 10*s.* to 20*l.*, for linens to be afterwards furnished. He might have received much larger sums, and he found great difficulty in stopping the outpouring of sympathy and support that came upon

Convent at Galway gave every day a good meal of porridge to upwards of 600 starving children who attended their schools. The ladies of the Owenmore Relief Committee raised and expended in various works of charity 2427*l.*, exclusive of grants of the British Association and of the Government, to five parochial kitchens superintended by them. Want of space alone prevents us from alluding to many other similar instances.

In the autumn and winter of 1846 efforts were made to induce the Government to take an active part in assisting emigration by an apportionment of the expense of passage and outfit between the public, the landlords, and the emigrants themselves; but, on a full consideration of the subject, it appeared that the emigration about to take place in the ensuing season to Canada and the United States, without any assistance from the public, was likely to be quite as large as those countries could properly absorb, and that the consequence of the interference of the Government would be that the movement would be carried beyond those limits which were consistent with safety, and that a burden would be transferred to the taxpayers of the United Kingdom, which would otherwise be borne by those to whom it properly belonged, owing to their interests being more immediately concerned. It is also a point of primary importance, that those persons should emigrate who, from age, health, character, and circumstances, are best able to contend with the hardships and difficulties of a settler's life, and it was considered that this object would be most fully attained if the emigration were entirely voluntary. The true test of fitness in this case is the possession, on the part of each individual concerned, of the will and ability to emigrate; and the probability of helpless multitudes being sent forth, who, both for their own sakes and for that of the colony, ought to have remained at home, is increased in proportion as other motives and other interests besides those of the emigrant himself influence his act of expatriation. For these reasons Her Majesty's ministers determined to confine themselves to taking increased securities for the safety of the emigrants during their voyage, and their early and satisfactory settlement after their arrival abroad. Several additional emigration agents were appointed to Liverpool and to different Irish ports; the annual vote in aid of colonial funds for the relief of sick and

him; and until it became generally known that he had returned large sums of money, the influx did not cease. It is an interesting fact that of 30,000 yards of linen made up to the end of October, there is only one piece that was not duly returned to him by the workwomen, and Mr. Gildea thinks he shall still get the missing piece.

destitute emigrants from the United Kingdom was increased from 1000*l.* to 10,000*l.*; provision was made for giving assistance in the case of emigrant ships driven back by stress of weather, and the Governor-General of Canada was informed that Her Majesty's government would be prepared to defray its fair share of any further expense that might have to be incurred in giving the emigrants necessary relief, or in forwarding them to places where they might obtain employment.

Early in the year 1847 the roads to the Irish sea-ports were thronged with families hastening to escape the evils which impended over their native land. The complaint in Ireland, at the time, was, that those who went belonged to the best and most substantial class of the agricultural population. The complaint afterwards in Canada was, that those who came were the helpless and destitute. The fact was, that the emigrants generally belonged to that class of small holders, who, being somewhat above the level of the prevailing destitution, had sufficient resources left to enable them to make the effort required to effect their removal to a foreign land; and the steps taken by them to convert their property into an available form, had for months before been the subject of observation. Large remittances, estimated to amount to 200,000*l.* in the year ending on the 30th March, 1847, were also made by the Irish emigrants settled in the United States, and the British North American provinces, to enable their relations in Ireland to follow them.* The emigration of 1846 from the United King-

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* The following extract from a letter from Mr. Jacob Harvey of New York, to Mr. Jonathan Pim, one of the Secretaries of the Dublin Relief Committee of the Society of Friends, contains many interesting particulars relating to these remittances, which are highly honourable to the Irish character: —

'New York, January 5. 1847.

'The destitution of our poor at this season will certainly curtail the amount for Ireland, and it is used as an excuse by those who feel called upon to assist them at their own doors first. But I am happy to say that the poor labouring Irish themselves are doing their duty fully. Without any public meetings or addresses, they have been silently remitting their little savings to their relations at home; and these remittances, be it remembered, go to every parish in Ireland, and by every packet. These drafts are from 1*l.* and upwards; they probably average from 4*l.* to 5*l.* In my letter to J. H. Todhunter I told him I had ascertained from five houses here, that within the past sixty days, they have received and remitted from the poor Irish 80,000 dollars. I had not time to send round to the other houses that day; but since the steamer sailed, I have collected further

dom, which was the largest ever known up to that time, amounted to 129,851 persons; the emigration of the first three quarters of 1847 was 240,461; and almost the whole of it was from Ireland to Canada and the United States.*

Even this does not represent the full extent of the outpouring of the population of Ireland which took place in this eventful year. From the 13th January to the 1st November, 278,005† immigrants arrived at Liverpool from Ireland, of whom only

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returns, although not yet all; and to my no small delight, the sum total remitted since November the 1st amounts to 150,000 dollars or 30,000*l.* sterling. I am now collecting an account of the sums remitted through the same houses by the poor Irish for the year 1846, and I have received returns from the five principal houses, and the sum total is 650,000 dollars, or 130,000*l.* There are yet four houses to hear from, which will swell the amount. This, however, is enough to astonish everybody who has not been aware of the facts; and it is but right that credit should be given to the poor abused Irish for having done their duty. Recollect that the donors are working men and women, and depend upon their daily labour for their daily food; that they have no settled income to rely upon; but with that charming reliance upon Divine Providence which characterises the Irish peasant, they freely send their first earnings home to father, mother, sister, or brother. I requested J. H. Todhunter to have the facts I gave him published, and I make a similar request to thee, as they are still more cheering. A publication of the kind may stimulate the rich to do their duty, where they have hitherto neglected it; and it will give evidence to those who have no faith in Irishmen, that whenever they are able to get good wages, they never forget their relatives and friends who are in want.'

* The emigration for each division of the United Kingdom during the first three quarters of 1847 was as follows; but it must be remembered that those who embarked at Liverpool consisted almost wholly of Irish. There can also be no doubt that the Irish helped to swell the tide from several other ports of Great Britain, and especially in the west of Scotland.

From Liverpool.	From other English Ports.	Total from England.	From Scotland.	From Ireland.	Total.
114,301	22,094	136,395	8,155	95,911	240,461

† Those Irish labourers who annually come to England, by way of Liverpool, to help to gather in the harvest, and return to Ireland after it is over, are included in this number. They are variously estimated at from 10,000 to 30,000.

122,981 sailed from that port to foreign countries. The conflux of this mixed multitude was formidable both to the health and resources of the inhabitants of Liverpool; but they nobly faced the danger, and exerted themselves to meet the emergency with the vigour it required. The portion of the town occupied by the Irish was divided into thirteen districts, in each of which a relief station was opened, and twenty-four additional relieving officers were appointed, under the superintendence of two inspectors. The number of persons relieved daily amounted for some time to upwards of 10,000. The district medical officers were increased from six to twenty-one, and extensive premises were hired or constructed for the purpose of being used as temporary fever hospitals. All this was done at the expense of the inhabitants, and the only assistance given by the Government was, that when the fever increased to an alarming extent, quarantine ships were stationed in the Mersey to receive the infected. Nineteen relieving officers died at Liverpool alone of fever caught in the execution of their duties. The influx of poor Irish by way of Glasgow, Ardrossan, Port Patrick, Fleetwood, the Welsh ports, Bristol, Plymouth, Southampton, and London itself, was also very large; and quarantine arrangements had to be made in the Clyde similar to those at Liverpool.

Some relief was obtained by the passing of the Act 10 and 11 Vict. c. 33., 'to amend the laws relating to the removal of poor 'persons from England and Scotland'; and 4583 paupers, who had become chargeable to the Liverpool parochial funds, or who applied to be removed, were sent back to their own districts in Ireland, at a cost of 1322*l.*, between the 19th of July, when the act came into operation, and the 31st October. Previously to this, there was very little crime among these poor people, not even in petty thefts; but it soon appeared that they preferred being sent to prison to being sent back to Ireland. In the year ending 30th September, 1846, 398 natives of Ireland were committed to the borough prison at Liverpool for begging, pilfering about the docks, &c. In the year ending 30th September, 1847, 888 were so committed. In the month of October 1846, 80 were committed; in the same month of 1847, 142. This pauper immigration passed inland to all the large towns of this island, as far as London and Edinburgh; and the following statement of the number of Roman Catholic clergymen, who died of the Irish fever, caught in attending the sick since March 1847, may be taken as an index of the relative pressure*:—

* 5000 Irish paupers were relieved in Manchester in the last week in February, and for several weeks following there were more than

Lancashire.

Rev. Peter Nightingale, resident priest of St. Anthony's, Great Homer Street, Liverpool.
William Parker, senior resident priest of St. Patrick's, Park Lane, Liverpool.
Richard Grayston, resident priest of St. Patrick's, Park Lane, Liverpool.
James Haggar, resident priest of St. Patrick's, Park Lane, Liverpool.
Thomas Kelly, D. D., resident priest of St. Joseph's, Grosvenor Street, Liverpool.
John F. Whitaker, removed from Manchester to succeed Dr. Kelly at St. Joseph's, where he died.
J. F. Appleton, D. D., senior resident priest of St. Peter's, Seel Street, Liverpool.
John A. Gilbert, resident priest of St. Mary's, Edmund Street, Liverpool.
William V. Dale, resident priest of St. Mary's, Edmund Street, Liverpool.
Robert Gillow, resident priest of St. Nicholas's, Copperas Hill, Liverpool.
John Hearne, senior priest of St. John's, Wigan.
Robert Johnson, resident priest of St. John's, Wigan.
John Dowdall, resident priest in Bolton.

Cheshire.

Michael Power, resident priest of St. Mary's, Duckinfield.

Yorkshire.

Thomas Billington, Vicar-General of Yorkshire district, and senior resident priest of St. Mary's, York.
Henry Walmsley, senior resident priest of St. Anne's, Leeds,
Richard Wilson, resident priest of St. Anne's, Leeds.
Edwd. Metcalfe, successor to Rev. R. Wilson at St. Anne's, Leeds.
Joseph Curr, Secretary to Bishop Briggs, with whom he resided at Fulford House near York. He volunteered his services after the death of Mr. Metcalfe, and in the course of a few weeks died at St. Anne's, Leeds.
J. Coppinger. Removed from Hull to supply the vacancies caused by the above deaths, and very shortly after his removal died at St. Anne's, Leeds.

Durham.

Joseph Dugdale, resident priest of St. Mary's, Stockton.

4000 on an average receiving out-door, and from 600 to 700 in-door relief. This was independent of the adjoining districts of Salford and Chorlton, where great numbers of Irish were also relieved. Nearly 90,000 destitute and disabled Irish, including women and children, are stated to have received parochial relief in Scotland, at a total expense of about 34,000*l.*; but as the same persons were frequently

Northumberland.

Rev. James Standen, senior resident priest of St. Andrew's, Newcastle-on-Tyne.

Right Rev. Dr. Riddell, Vicar Apostolic of the Northern District and Bishop of Longo. After the death of Mr. Standen, Bishop Riddell undertook to attend to the visitation of the sick in person. He very soon caught the fever, and died at Newcastle.

Staffordshire.

Rev. James Kennedy, resident priest at Newcastle-under-Lyne.

Gloucestershire.

P. Hartley, resident priest of St. Peter's, Gloucester.

Wales.

Edward Mulcahy, resident priest of St. Mary's, Bangor, N. Wales.
M. Carroll, resident priest at Merthyr Tidvil, S. Wales.

Scotland.

Richard Sinnott, Stranraer, Greenock.
J. Bremner, Abbey Parish, Paisley.
W. Walsh, Old Monkland.

The pestilence, which all the precautions practicable on land could not overcome, broke out, as was to be expected, with increased virulence on board the emigrant ships. A new law was passed at Boston, in Massachusetts, empowering the local authorities to demand a bond of 1000 dollars from the masters of emigrant ships for each passenger apparently indigent, that he should not become chargeable to the state or to the city for ten years, the effect of which was to divert the stream of emigration to a greater extent than usual to Canada and New Brunswick. The deaths on the voyage to Canada increased from 5 in every 1000 persons embarked, to 55, or to eleven times their previous rate; and so many more arrived sick, that the proportion of deaths in quarantine to the numbers embarked, increased from 1½ to no less than 60 in the 1000, making a total mortality of nearly 12 per cent.* A medical

relieved in more than one parish, and were therefore returned by more than one inspector, the number of persons of this description newly arrived in Scotland is not so great as that above stated.

* The details of the frightful mortality connected with the great emigration of 1847 from Ireland to Canada, are as follows: —

Deaths:	On the passage - - - -	3,900
—	In vessels during detention in quarantine	1,282
—	At the quarantine station - -	3,452
—	At the Marine Hospital, about - -	1,000
		9,634

board was appointed; large supplies of provisions were despatched to the quarantine station; tents sufficient for the reception of 10,000 persons were issued from the Ordnance stores, and the labours of the Commissariat in this war against famine and pestilence were carried on at the same time on both sides of the Atlantic; but the utmost exertions and the most liberal expenditure could not prevent a fearful amount of suffering amongst the emigrants, and a painful spread of disease to the resident population.

We are well aware that among men of talents and of benevolent dispositions, there is a wide difference on the important question of emigration; and in what follows on this subject, we wish to be understood, not as committing ourselves to particular opinions, but merely as making a statement, in pursuance of the historical character of this review, of what we believe to have been the views which guided the resolutions of the Government.

There is no subject of which a merely one-sided view is more commonly taken than that of Emigration. The evils arising from the crowded state of the population, and the facility with which large numbers of persons may be transferred to other countries, are naturally uppermost in the minds of landlords and rate-payers; but Her Majesty's Government, to which the well-being of the British population in every quarter of the globe is confided, must have an equal regard to the interests of the emigrant and of the colonial community of which he may become a member. It is a great mistake to suppose that even Canada and the United States have an unlimited capacity of absorbing a new population. The labour market in the settled districts is always so nearly full, that a small addition to the persons in search of employment makes a sensible difference; while the clearing of new land requires the possession of resources *, and a power of sustained exertion not ordinarily belonging to the newly-arrived Irish emigrant. In this, as well as in the other operations by which society is formed or sustained, there is a natural process which cannot with impunity be departed from. A movement is continually going on towards the backwoods on

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Numerous deaths also took place among the emigrants to New Brunswick.

* Settlers in the backwoods must have the means of support from twelve to fifteen months after their arrival, and this cannot be accomplished for less than 60*l.*, at the lowest estimate, for each family consisting of a man, his wife, and three children, or equal to 3½ adults on an average.

the part of the young and enterprising portion of the settled population, and of such of the former emigrants as have acquired means and experience; and the room thus made is occupied by persons recently arrived from Europe, who have only their labour to depend upon. The conquest of the wilderness requires more than the ordinary share of energy and perseverance, and every attempt that has yet been made to turn Paupers into Backwoodsmen by administrative measures, has ended in signal failure. As long as they were rationed, they held together in a feeble, helpless state; and when the issue of rations ceased, they generally returned to the settled parts of the country. Our recent experience of the effects of a similar state of dependence in Ireland, offers no encouragement to renew the experiment in a distant country, where the difficulties are so much greater, and a disastrous result would be so much less capable of being retrieved.

It must also be observed, that from an early period of the present distress, two modes of meeting the calamity presented themselves, which have since acquired greater distinctness in people's minds, and have been acted upon in a more and more systematic manner. The first of these was to stimulate the industry of the people, to augment the productive powers of the soil, and to promote the establishment of new industrial occupations, so as to cause the land once more to support its population, and to substitute a higher standard of subsistence, and a higher tone of popular character, for those which prevailed before. This plan aimed at accomplishing the object without the pain or risk of wholesale expatriation; and the result proposed by it was to increase the strength and prosperity of the country and the happiness of the people, by enabling the present population to maintain itself comfortably at home by the exercise of its industry. The Government adopted this plan from the first, and has since promoted its success by every means in its power. The other plan was to relieve the mother country by transferring large masses of people to the Colonies, and great efforts were made to obtain the command of public funds to assist in paying the expense of this emigration.

The main point, therefore, is, that by taking an active part in assisting emigration, the Government would throw their weight into the scale with the last of these two plans. They would assist it by their means; and, what is of far more consequence, they would countenance it by their authority: and in the same degree, they would discourage and relax the efforts of those who are exerting themselves to carry out the opposite

plan. In order to appreciate the full ultimate effect of such an interposition, it must be remembered that the solution of the great difficulty by means of emigration carried out on the scale and in the manner proposed, offers to the promoters of it the attraction of accomplishing their object by a cheap and summary process; while the other remedy, of enabling the population to live comfortably at home, can be arrived at only by an expensive, laborious, and protracted course of exertion: and it therefore behoves the Government, which holds the balance between contending parties, to take care to which side it lends its influence on a social question of this description.

Those who have purchased or inherited estates in which a redundant population has been permitted or encouraged to grow up, may with propriety assist some of their people to emigrate, provided they take care to prevent their being left destitute on their arrival in their new country. The expense of assisting emigration under such circumstances properly falls on the proprietor. A surplus population, whether it be owing to the fault or to the misfortune of the proprietor or his predecessors, must, like barrenness, or the absence of improvements, be regarded as one of the disadvantages contingent on the possession of the estate; and he who enjoys the profits and advantages of the estate, must also submit to the less desirable conditions connected with it. So long as emigration is conducted only at the expense of the proprietor, it is not likely to be carried to an injurious or dangerous extent, and it will press so heavily on his resources, as to leave the motives to exertion of a different kind unimpaired. Emigration is open to objection only when the natural checks and correctives have been neutralised by the interposition of the Government, or other public bodies. It then becomes the interest and policy of the landed proprietor to make no exertion to maintain his people at home, to produce a general impression that no such exertion could be successfully made, and to increase by every possible means the pressure upon those parties who, having the command of public funds, are expected to give their assistance; and the responsibility of the consequences, whatever they may be, becomes transferred from the individual proprietors to the Government or public body which countenances and promotes their proceedings.

Three things had become apparent before the close of the year 1846: the first was, that if these gigantic efforts were much longer continued, they must exhaust and disorganize society throughout the United Kingdom, and reduce all classes of people in Ireland to a state of helpless dependence; the second was, that provision ought to be made for the relief of

extreme destitution in some less objectionable mode than that which had been adopted, for want of a better, under the pressure of an alarming emergency; and the third was, that great efforts and great sacrifices were required to provide another and a better subsistence for the large population which had hitherto depended upon the potato. Upon these principles the plan of the Government for the season of 1847-8, and for all after time, was based.

Much the larger portion of the machinery of a good Poor Law had been set up in Ireland by the Irish Poor Relief Act (1 & 2 Vict. c. 56.), which was passed in the year 1838. The island had been divided into unions, which were generally so arranged as to secure easy communication with the central station; and these had been subdivided into electoral districts, each of which appointed its own guardian, and was chargeable only with its own poor, like our parishes. A commodious workhouse had also been built in each union by advances from the Exchequer*, and rates had been established for its support. No relief could, however, be given outside the workhouses, and when these buildings once became filled with widows and children, aged and sick, and others who might with equal safety and more humanity have been supported at their own homes, they ceased to be either a medium of relief or a test of destitution to the other destitute poor of the union. To remedy this and other defects of the existing system, three Acts of Parliament were passed in the Session of 1847†, the principal provisions of which were as follows:—Destitute persons who are either permanently or temporarily disabled from labour, and destitute widows having two or more legitimate children dependent upon them, may be relieved either in or out of the workhouse, at the discretion of the guardians. If, owing to want of room, or to the prevalence of fever or any infectious disorder, adequate relief cannot be afforded in a workhouse to persons not belonging to either of the above-

* The repayment of these advances, which amount altogether to 1,145,800*l.*, has not yet been pressed, out of consideration for the circumstances of the country.

† An Act to make further provision for the Relief of the Destitute Poor in Ireland, 10 Vict. cap. 31.—[Passed 8th June, 1847.]

An Act to provide for the Execution of the Laws for the Relief of the Poor in Ireland, 10 and 11 Vict. cap. 90.—[Passed 22d July, 1847.]

An Act to make provision for the Punishment of Vagrants and Persons offending against the Laws in force for the Relief of the Destitute Poor in Ireland, 10 and 11 Vict. cap. 84 —[Passed 22d July, 1847.]

mentioned classes, the Poor Law Commissioners may authorise the guardians to give them out-door relief in food only; the Commissioners' order for which purpose can only be made for a period of two months, but, if necessary, it can be renewed from time to time. Relieving officers and medical officers for affording medical relief out of the workhouse are to be appointed; and in cases of sudden and urgent necessity, the relieving officers are to give 'immediate and temporary relief in food, 'lodging, medicine, or medical attendance,' until the next meeting of the guardians. After the 1st November, 1847, no person is to be relieved either in or out of a workhouse, who is in the occupation of more than a quarter of an acre of land. No person is to be deemed to have been a resident in an electoral division so as to make it chargeable with the expense of relieving him, who shall not during the three years before his application for relief have occupied some tenement within it, or have usually slept within it for thirty calendar months. All magistrates residing in the union are to be *ex-officio* guardians, provided the number does not exceed that of elected guardians. Greater facilities are given for dissolving Boards of Guardians, in case they do not duly and effectually discharge their duty according to the intention of the several Acts in force. Public beggars and persons going from one district to another for the purpose of obtaining relief are rendered liable to one month's imprisonment with hard labour; and an independent Poor Law establishment is constituted for Ireland, consisting of three Commissioners (two of whom are to be the Secretary and Under-Secretary for Ireland for the time being), an Assistant Commissioner and Secretary, and as many Inspectors as may be required.

The principle of a comprehensive Poor Law and of the abolition of mendicancy, having thus been established, the efforts of the Government were earnestly directed to the removal of the difficulties likely to impede its satisfactory working. The repayment of the first instalment due on account of the advances for the Relief Works of the winter and spring of 1846-7, (9 and 10 Vict. c. 107.) was postponed until after the Spring Assizes of 1848, and it was announced that no demand would be made until after the 1st January, 1848, for the repayment of the advances under the temporary Relief Act, when the rates levied previously to that date for the current expenses of the permanent Poor Law equalled or exceeded 3*s.* in the pound, and that even when rates had been struck for the purpose of repaying the advances, they might, if necessary, be applied to defraying those current expenses. By these arrange-

ments the demands for repayment between the Summer Assizes of 1847 and the Spring Assizes of 1848 were limited to the second instalment for the Relief Works and repairs of Grand Jury Roads of 1846, (9 Vict. c. 1, and 2.) amounting only to 27,000*l.* for the whole of Ireland; and after providing for this and for the expense of the gaols and other ordinary local demands, all the rates levied from the produce of the abundant harvest of 1847 became applicable to the relief of the people under the Poor Law, then for the first time coming into full operation. The Guardians were at the same time earnestly recommended by the Poor Law Commissioners to strike rates sufficient to meet the exigencies of the coming winter, and to be strict in the levy of them. They were advised to guard against the necessity of giving out-door relief to the able-bodied, by providing for disabled persons, widows, school-children, and fever patients out of the workhouse; and five Boards of Guardians which had obstinately persisted in not doing their duty were dissolved, and paid Guardians were appointed in their place. Ireland had now had a year and a half's experience of the administration of relief on a great scale and in different ways, and the objects to be aimed at and the abuses to be avoided had become generally known. 'The very evil itself,' the Relief Commissioners observe in their Sixth Monthly Report, 'has been attended with a salutary reaction, and the 'whole country seems, by this experience, to have been made 'sensible that it is only by the most rigid and thoroughly con-'trolled principles of affording relief by any public arrangement, 'that society can be protected from a state of almost universal 'pauperisation, and that the charge of a more benevolent allevi-'ation of distress than what is absolutely necessary for the bare 'support of the thoroughly destitute, must and ought to be left 'to the exertions and voluntary distribution of the charitable 'and humane, which it is hoped will always be largely afforded.' During the week ended Saturday the 14th August 1847, there were above 20,000 persons on the relief lists of the electoral division which comprises the northern half of the city of Dublin; and as the operations under the Temporary Relief Act terminated in that union on the 15th, the guardians, on the 16th, had to deal with the apparent necessity of having to provide relief for above 20,000 persons. On the morning of that day, however, owing to previous arrangements, they had room in the workhouse of their union for 400 individuals, and by offering workhouse relief to applicants, aided by some assistance from the Mendicity Institution, the guardians were enabled in the course of six days to reduce the number on the relief lists to

about 3000 persons. This is only one instance among many that might be adduced, of the practical value of the experience that has been acquired in Ireland of the true principles of Poor Law management.

A principle of great power has thus been introduced into the social system of Ireland, which must be productive of many important consequences besides those which directly flow from it. Mr. Drummond's apophthegm, that 'property has its duties 'as well as its rights,' having now received the sanction of law, it can never hereafter be a matter of indifference to a landed proprietor, what the condition of the people on his estate is. The day has gone by for letting things take their course, and landlords and farmers have the plain alternative placed before them of supporting the people in idleness or in profitable labour. Hitherto the duties of Irish landlords had been, as jurists would say, of imperfect obligation. In other words, their performance depended upon conscience, benevolence, and a more enlightened and far-seeing view of personal interest than belongs to the generality of men, the consequence of which has been a remarkable difference in the conduct of Irish landlords; and while some have made all the sacrifices and exertions which their position required, others have been guilty of that entire abandonment of duty which has brought reproach upon their order. For the future this cannot be. The necessity of self-preservation, and the knowledge that rents can be saved from the encroachments of poor-rates, only in proportion as the poor are cared for and profitably employed, will secure a fair average good conduct on the part of landed proprietors, as in England, and more favourable circumstances will induce improved habits. The poor-rate is an absentee tax of the best description; because, besides bringing non-resident proprietors under contribution, it gives them powerful motives either to reside on their estates or to take care that they are managed, in their absence, with a proper regard to the welfare of the poor.* Lastly, the per-

* 'I would sincerely regret that anything I have said should appear to be written as if I sought occasion to point out errors, and hold them up; far from it; I mention them with sorrow, and a kindly wish that they may be corrected. The position of the respectable classes at this moment in many instances is surely pitiable. There is but one course by which this country can rise, and take her proper position, and that is by a hearty and sincere determination to work for the public good, at the same time throwing aside all selfish and party feeling. In that case, there is no reason why we should despair; but otherwise, no mortal can either pass laws, or propose any other thing which would be attended with

formance of duty supposes the enjoyment of equivalent rights. When rich and poor are at one again, the repudiating farmer

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success. In this I particularly allude to the Poor Law now about to be administered. I look upon it as an indirect absentee tax, drawing from those who did not contribute before, or in a very slight degree. It assures the poor man that from the land he must have support, and that what he labours on will one day sustain him when he can no longer toil. It will also compel others to consider that unless employment is provided, they must support him without a remunerative return,—and if this is rightly considered, then the heavy affliction which the Almighty has been pleased to lay on them will prove a lesson for good.

'On the subject of relief being given without having a corresponding return for it in labour, I feel very apprehensive that, owing to the habits of the lower orders, the present repugnance to entering the union-house may give way, and that for the sake of an idle life, they may accept the terms. To prevent this, and rescue both landlord and peasant from certain ruin, there must be employment given fairly remunerative to both, not by Government, but by the owners of the soil. Until lately, what was the condition of the peasant? Work as he would, till and rear what he might, he could never hope to benefit. His portion was the potato only, shared, it may be said, with his pig. He dare not use anything else. Let misfortune come on him, or disease render him unable to work, he had no claim on the land. One a little less poor than himself might help him, but who else? The charity I have seen has been from the poor to the poor. Is it any wonder that they became spiritless, idle, and even worse?

'A townland near here, owned by a landlord who resides constantly away, is let to a middleman at 10*s.* an acre. That middleman resides away also, and he relets it to a person who lives in the county of Cork, and only occasionally comes there. It is sublet again, until the price received for a quarter of an acre is 1*l.* 10*s.* per annum. Can that place be otherwise than full of distress?

'Near it is another townland. The owner resides here, but he has never attended to it. In the late calamity he applied to me for seed and assistance, declaring his intention to provide seed at his own expense; and to insure its being sown, he said he should employ a person to superintend the sowing, as the land was prepared. His tenants were without food; but to encourage and assist in this case, an application was made by me to the Society of Friends for a supply to sustain the people while working, which was granted. The party supposed he had about sixty to provide for, but was frightened at over 600 applications for food; and it then came out that his land was underlet to an enormous degree. He had never paid proper attention by inspecting his farms, &c. The result is, that now he can neither get rent, nor the repayment of the value of the seed. What has been grown will not suffice to feed those who are located

will find the position of his landlord too strong to allow of his taking his present license, and it will then be fearlessly asserted that the converse of Mr. Drummond's maxim is also true, and that 'Property has its rights as well as its duties.' For the first time in the history of Ireland, the poor man has become sensibly alive to the idea that the law is his friend, and the exhortation of the parish priest of Dingle to his flock in September, 1847, indicates an epoch in the progress of society in Ireland: — 'Heretofore landlords have had agents who col-'lected their rents, and they supported them. The grand jury 'had agents to collect the county-cess, and they supported 'them. Now, for the first time, the poor man has an agent to 'collect *his* rent. That agent is the poor-rate collector, and he 'should be supported by the poor.' Time must, however, be allowed for the gradual working of this feeling, before its full effects can be seen.

Those who object to the existing Poor Law are bound to point out a more certain and unobjectionable mode of relieving the destitute and securing the regular employment of the poor. The principle of the Poor Law is, that rate after rate should be levied *for the preservation of life*, until the landowners and farmers either enable the people to support themselves by honest industry, or dispose of their property to those who can and will perform this indispensable duty.

The fearful problem to be solved in Ireland, stated in its simplest form, is this: — A large population subsisting on potatoes which they raised for themselves, has been deprived of that resource, and how are they now to be supported? The obvious answer is, by growing something else. But that cannot be, because the small patches of land which maintained a family when laid down to potatoes, are insufficient for the purpose when laid down to corn or any other kind of produce; and corn cultivation requires capital and skill, and combined labour, which the cotter and conacre tenants do not possess. The

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on the land. They cannot pay rent, and they will not give up their holdings. The population has been increased in such cases, and others, to an extent beyond what the land can bear. Another cause is, that the Roman Catholic clergy derive their income mainly from fees and contributions at marriages and christenings; and though there are some who see the disastrous result of encouraging the increase of the population, and are scrupulous on that head, still, as their subsistence depends on it, it cannot be expected that they will exert themselves in a way likely to deprive themselves of daily bread by discouraging thoughtless rushing into improvident marriages.' — *Captain Mann's Narrative.*

position occupied by these classes is no longer tenable, and it is necessary for them either to become substantial farmers, or to live by the wages of their labour. They must still depend for their subsistence upon agriculture, but upon agriculture conducted according to new and very improved conditions. Both the kind of food and the means of procuring it have changed. The people will henceforth principally live upon grain, either imported from abroad or grown in the country, which they will purchase out of their wages; and corn and cattle will be exported, as the piece-goods of Manchester are, to provide the fund out of which the community will be maintained under the several heads of wages, profits, and rents. It is in vain that the granary of the merchant and the homestead of the farmer are filled to overflowing, if the mass of the people have not the means of purchasing, and it has therefore become of the highest consequence that the resources which are most available for the payment of wages should be cultivated to the utmost. The Poor Law cannot alone bear the whole weight of the existing pauperism of Ireland; and its unproductive expenditure, however indispensable, must be supported by adequate industrial efforts, in order to prevent all classes of society from being involved in one common ruin. Before this crisis occurred, Sir Robert Kane had proved in theory, and many good farmers in practice, that a much larger produce might be raised, and a much larger population might be supported from the soil of Ireland than heretofore; and this view has since been confirmed by numerous surveys conducted under the superintendence of the Board of Works, which have disclosed an extensive and varied field for the investment of capital, upon which the whole unemployed population of Ireland might be employed with much advantage to all parties concerned. The great resource of Ireland consists in the cultivation of her soil, the improvement of her cattle, the extension of her fisheries; and while there are large tracts of flooded land to be reclaimed, and still larger tracts of half cultivated land to be brought to a higher state of productiveness, it would be a misdirection of capital to employ it in the less profitable manufactures of cotton and wool. Ireland is benefited to a greater extent than many parts of Scotland and England are, by the markets and the means of employment which Manchester and Glasgow afford; but her own staple manufacture is corn.

The Treasury was authorised by the 1 & 2 Wm. 4. c. 33., passed in 1831, to lend money to private individuals for the improvement of their estates, provided the value of the estate was increased 10 per cent. and repayment was made in three years;

and by the first Act of the Session of 1846 the period of repayment was extended to twenty years. This power was however very sparingly acted on. Grave objections existed to the State becoming a general creditor throughout the country, and the operations of private capitalists were likely to be deranged and suspended by the interference of such a competitor. A rate of interest (5 per cent.) higher than the market rate for money lent on mortgage, was therefore charged, and the result was, that only three persons took out loans under this arrangement, one of whom was the late Lord Bessborough. At the close of the Session of 1846, the Act 9 & 10 Vict. c. 101. was passed, by which 1,000,000*l.* was authorised to be lent for drainage in Ireland, and repayment was to be made in equal half-yearly instalments, spread over twenty-two years, including interest at $3\frac{1}{2}$ per cent.; but this Act could not be worked, so far as Ireland was concerned, partly owing to a legal opinion that tenants for life were not eligible for loans under it, and partly because the works must be executed to a certain extent before the money could be advanced. Upon this the Treasury issued a Minute dated the 1st, and a letter dated the 15th of December, 1846*, offering to lend money for the general improvement of estates, including drainage, on a footing which combined the advantages of the previous Acts with the indulgent mode of repayment introduced by the last; and in the following Session the Act 10 & 11 Vict. c. 32. was passed, by which all the existing legislation on the subject was consolidated, and loans† were authorised to be made in Ireland to the extent of 1,500,000*l.*, on the principle that the improvements on each estate are to be executed by the proprietor, and that the interference of the officers of the Government is to be confined to ascertaining, in the first instance, that the proposed improvements are likely to

* First Board of Works Series of 1846-7, pp. 338—341.

† The purposes to which these loans are applicable are as follows:—

1. The drainage of lands by any means which may be approved by the Commissioners.
2. The subsoiling, trenching, or otherwise deepening and improving the soil of lands.
3. The irrigation or warping of lands.
4. The embankment of lands from the sea or tidal waters, or rivers.
5. The enclosing or fencing, or improving the fences, drains, streams, or water-courses of land.
6. The reclamation of waste or other land.
7. The making of farm-roads.
8. The clearing land of rocks and stones.

be of such a permanent and productive character as would justify the cost of them being made a charge upon the estate, with priority over other incumbrances, and afterwards to inspecting the works from time to time, so as to secure the proper application of the sums advanced to the purposes for which they were intended. No advance can be made under this Act unless the increased annual value to be added to the land by the proposed improvement shall equal the amount to be charged on it; and a difficulty having arisen from the circumstance that the full benefit to be derived from draining is attained in different soils at different periods after the completion of the drains, it was declared by a Treasury Minute, dated the 15th June, 1847, that it is not necessary that each portion of land improved should yield, in the first and in every subsequent year, an additional rent equal to $6\frac{1}{2}$ per cent. per annum on the outlay beyond the present rent; but that the general result of the improvement of the lands on which the rent-charge is to be secured, will, one year with another, from the period when the full benefit of the improvement may be supposed to have accrued, be such as to produce an increased annual value to the above extent; taking care, of course, that the rent-charge is fixed upon lands amply sufficient to secure the repayment to the Government of the sums so charged. These directions had particular reference to the circumstances of the poverty-stricken districts in the West of Ireland, where it is peculiarly desirable to increase the food grown on the spot, and to provide the means of employment for the people in the productive avocations of agriculture; and every practicable facility and preference is therefore given to the landed proprietors in those districts which is not inconsistent with justice to other parties. It was determined by the same Minute, in pursuance of the course taken by Parliament with respect to the loans for drainage in England and Scotland, that the loans to be made to any one landed proprietor should not, under ordinary circumstances, exceed, in the aggregate, the sum of 12,000*l.*; but if, in any particular case, owing to the extent of the property to be improved, or other causes, it should be advisable to enlarge this limit, the Lords of the Treasury will be prepared to authorise such additional sum as may appear to be proper, not exceeding, however, an aggregate amount to the same proprietor of 20,000*l.*

In taking its line on this subject, the Government had to choose between employing the agency of the landed proprietors and that of public officers; and after much consideration and some experience, the final decision was in favour of the former alternative as above described.

By following this course, all the existing relations of society were preserved and strengthened; the landed proprietors were held to their responsibility for the well-being of the people residing on their estates, and they were assisted to the extent of the loan fund placed by Parliament at the disposal of the Government. The proprietor or his agent has the strongest interest in seeing that the work is well done, and can exercise the most effectual superintendence over it; and as the people are invited to exert themselves under the eye of their natural employers, the healthy relation of master and labourer becomes established throughout the country. It has not, as yet, been usual in Ireland, for the landlord to undertake to make the more expensive and permanent improvements, as is the case in England, but it may be hoped that an impulse will be given to this wholesome practice by the loans to proprietors under the Land Improvement Act. The landlord will be encouraged to proceed in a course of improvement which he finds by experience to be profitable to him; he will be likely to make further investments on land which has been reclaimed or improved by him, and he will be especially careful to prevent it from being subdivided into small holdings.*

The other plan, of reclaiming waste lands by the direct agency of the Government, did not survive the objections made to it on the score of its interference with the rights of private property. The land must be obtained before it could be improved, and was it to be left to the discretion of Commissioners to take any bog-land they pleased at a valuation; to single out, for instance, a tract of unreclaimed land in the centre of an estate? Some firm land also must be annexed to each

* By neglecting their estates, and omitting to construct proper farm-buildings, and to make other necessary improvements, Irish landlords relinquish their position in rural society, and give free scope to the agrarian revolutionary plans which, under the name of 'fixity of tenure,' and 'tenant right,' would dispossess the landlord without conferring any permanent benefit on the tenant. In the smaller class of holdings, the entire gross produce is insufficient to support a family, without allowing for either rent, seed, or taxes; and even supposing that, with the dangerous help of the potato, eked out by harvest-work and begging, a rent is paid, the tendency to multiply and subdivide is so strong, that if the whole rent were given up, the holders would become, in a generation or two, much more numerous and equally poor. The fact is, that the main hope of extrication from the Slough of Despond in which the small holders in the centre and west of Ireland are at present sunk, is, from the enterprise, and capital, and improved husbandry of the class of owners commonly known by the name of Landlords.

allotment for the erection of the farm buildings, and to obtain soil for the improvement of the bog, and this would have given a still wider and more arbitrary discretion to the Commissioners. The compulsory powers had therefore to be given up, and without them the plan could not be worked.

But there are other objections to this plan which have a much deeper root. The first result of the Government undertaking to reclaim the waste lands of Ireland would be, that the mass of the people would throw themselves on these works as they did upon the roads, taking it for granted that the means of payment were inexhaustible, and that less labour would be exacted than in employment offered with a view to private profit. The landlords and farmers would consider that, as the Government had undertaken to employ the people and improve the soil, they were themselves absolved from responsibility, and they would refer all the persons who applied to them for employment, to the Government works, as has been so often done on former occasions. The single agency of the Government would be substituted for the exertions of the whole body of the landowners acting in concert with their tenants and dependents; and instead of landed proprietors and farmers laying out their own money for their own benefit, with all the care and economy which this supposes, we should have hundreds of public officers, of various grades and characters, expending public money, for the supposed benefit of the public, in a business totally foreign to the proper functions of Government, and without a possibility of effectual superintendence; the inevitable consequence of which would be bad work, idle habits, and profuse and wasteful expenditure. Lastly, when the land had been reclaimed, whatever care might be taken to dispose of it in farms of reasonable size, however durable might be the interest granted, or whatever legal restrictions might be attempted to be imposed, the old process of the subdivision of the land, and the multiplication of the persons subsisting upon it, would run its course. Nothing can supply the place of the watchful supervision exercised by a proprietor, for the protection of his own interests, in such a case.

A peasant proprietary may succeed to a certain extent*, where there is a foundation of steadiness of character, and a habit of prudence, and a spring of pride, and a value for independence

* In what follows we must be understood as giving expression to the practical conclusions of those who, having been charged with the unenviable task of superintending the measures of relief, and assisting to replace society on a permament basis after it had been unsettled by this great calamity, must be allowed to have had unusual advantages for a close examination of the subject under a variety of aspects.

and comfort; but we fear that all these words merely show the vain nature of schemes of peasant proprietorship for Ireland. The small holders of Belgium*, with all their industry and frugality, have, during this calamitous period, been the most distressed population in Europe next to Ireland. Their own resources were too small to carry them through a season of dearth, and they had no employers to assist them. In India, society is based on a system of small holdings, and there is no country in which destructive famines have been so common. In Ireland itself, the greatest over-population, and consequently the greatest distress, prevailed in those districts in which, owing to the existence of long leases, the landlords had no power to prevent the subdivision of the land. Mere security of tenure is of no avail, without the capital, and skill, and habits of life, and, above all, the wholesome moral qualities required to turn this advantage to good account. During the late season of dearth, food was dearer in the long peninsula which stretches to the south-west of England, than it was in Ireland, and the poor had no resource analogous to the farming stock of the Irish small holder; but the Devonshire and Somersetshire labourer lives by wages paid by persons richer than himself; and though severely pinched, he had enough for daily bread, without having recourse to charitable aid. The south-west of

* The same results appeared in those parts of France, Switzerland, Germany, and Sweden, in which the subdivision of the land has been carried to the greatest extent. The following extract, from a letter received in January last from Brest, contains a correct description of the manner in which that part of France was affected by the dearth: —'All the petty farmers are in the greatest distress, having been 'obliged to sell their wheat and most of their other grain in October, to 'pay their rents due on Michaelmas Day. The overplus in the crop 'of buckwheat is not sufficient to compensate for the deficiency in 'their stock of potatoes, and they are now living on cabbages, carrots, 'and a very small proportion of buckwheat. Unless some stringent 'measures be adopted to prevent the progressive subdivision of land 'in France, the country must eventually be reduced to the present 'state of Ireland.' It has been justly observed, that 'in agriculture, 'as in every other industrial process, prosperity must depend upon 'the application of capital to production; and equal injury is done 'when such application of capital is prevented, either by landlords 'refusing to give tenants a beneficial interest in their improvements, 'or by a combination of pauper occupants to prevent capitalists from 'obtaining possession of land.' Those who take an interest in this important subject will do well to read Mr. M'Culloch's excellent chapter on 'Compulsory Partition,' in his recently-published work 'On the Succession to Property vacant by Death.'

England is the least favourable specimen which Great Britain affords of the system of society based upon wages, because the flourishing manufactures which formerly existed in that quarter have disappeared before the superior natural advantages of the North, and wages are consequently very low.* In every other part of this island the contrast is more decidedly to the disadvantage of the small holdings; and in Northumberland, which is a county of large farms, there may be said to be no poor. Whether the good order, the physical well-being, or the moral and intellectual progress of rural society be considered, the best model is that in which the educated and enlightened proprietor, the substantial farmer, and the industrious labourer on regular wages, each performs his appropriate part.

The works required for deepening and straightening the course of many of the rivers are of peculiar importance to Ireland; because until the outfalls have been cleared, the landowners cannot enter upon the detailed or thorough drainage of their respective estates. In such cases the necessity of working upon the lands of different proprietors calls for the active interposition of the Board of Works, who make the preliminary survey, execute the work, and afterwards apportion the charge, according to the benefit derived by each person interested. The funds for carrying on these improvements had been chiefly obtained by the issue of debentures under the authority of the Acts of Parliament relating to the subject; but, under existing circumstances, loans were not to be expected from private individuals at a moderate rate of interest; and the ordinary loan fund of the Board of Works, amounting to 60,000*l.* a year, was therefore reinforced with 120,000*l.*, transferred to it from the London Loan Commissioners, and 250,000*l.* issued from the Consolidated Fund: making altogether a sum of 430,000*l.* placed at the disposal of the Board of Works, between the 1st April, 1847, and the 1st April, 1848, to be advanced by them for works of utility in Ireland, but principally for drainage of this description.

Next to agricultural improvements, well-selected public works perhaps offer the greatest resource in the present unhappy circumstances of Ireland. It is a mistake to suppose

* The inferior condition of the peasantry in the west of England is in a great degree owing to the increased use of the potato, the cultivation of which by the poor was much encouraged by the gentry and clergy as a cheap means of subsistence during the high prices of corn in the last war. Somersetshire and Devonshire were, in fact, fast becoming potato countries; and if the blight of that vegetable had occurred twenty years later, their sufferings might have approached to those of Ireland.

that opening a good road may not be the most reproductive work in many districts; and the construction of railroads on the great lines of communication, does for the whole country what new roads do for particular districts, facilitating and stimulating every description of production, and agriculture more than all, binding society together by a closer intercourse and interchange of good offices, and rapidly diffusing through the remote provinces the advantages enjoyed by the more favoured parts of the country.

The objection to Lord George Bentinck's plan for assisting Irish railways was, that while it was inadequate as a measure of relief, it was too large and indiscriminate when viewed as a measure for the promotion of public works. Private enterprise would have been overlaid; the bad lines would have been benefited at the expense of the good; the public credit would have been lowered; the available stock of national capital would have suffered an additional drain which it could ill afford; and after all, the object of relieving the existing distress would not have been attained. The famine was then at its height, and it could not be stayed by any measure short of distributing food to the multitude. After allowing for the largest number of persons who could be employed on railways, millions must still have starved, if other more effectual steps had not been taken; and the sums advanced to the Railway Companies, large as they would have been, would not have perceptibly diminished the expense of feeding a whole nation.* When this primary object had been attained, and all the funds had been raised by loan which the state of Ireland required, the Government was then in a position to consider what assistance could be given to

* Lord George Bentinck stated, that 1500 miles of railroad would give constant employment, either on the line or in the various occupations connected with it, to 110,000 able-bodied labourers and artificers, representing, with their families, 550,000 persons; but even supposing that all these labourers and others had been set to work at once, they would have been selected from the classes of persons least likely to require charitable assistance, while the weak and infirm would have been systematically excluded. The number of persons for whom the Government had to provide the means of subsistence at this crisis was upwards of three millions; and this had to be done in the neighbourhood of their own homes, which could not be accomplished by means of railroads, employment on which is confined to particular localities. The number of persons stated in the House of Commons as likely to be employed on railroads in Ireland was greatly overrated; the general surface of the country requires scarcely any deep cuttings or embankments; and the eskars, through which the cuttings are made, offer the finest possible material for ballasting.

railroads in common with other works of public utility; and 620,000*l.* was voted by Parliament to be lent to Railways which were legally able to borrow, owing to their having paid up half their capital, and could undertake to expend within a certain fixed time, another sum of their own equal to that advanced to them. By the aid thus given, the great South-Western Railway of Ireland will be enabled to employ a large number of men throughout the winter, and the important object of opening the communication between Dublin, Cork, and Limerick, will be accomplished at a much earlier period than would otherwise have been the case.

The other works in progress in Ireland with the aid of grants or loans from Parliament, are as follows: the Shannon navigation, which has been in operation for several years; the construction of new floating docks and markets at Limerick, works at Hawlbowline, with a view to render that place more useful as a naval station; four great works of combined navigation and drainage; the construction of three new colleges, and of several prisons and lunatic asylums; and the repair and construction of fishery piers, for which 50,000*l.* was voted in the session of 1846, and a further sum of 40,000*l.* in the session of 1847.

Having thus furnished as clear a sketch as the variety and complexity of the incidents would allow, of this remarkable crisis in our national affairs, when the events of many years were crowded into two short seasons, and a foundation was laid for social changes of the highest importance, it may be asked what fruits have yet appeared of this portentous seed-time, and what the experience is which we have purchased at so heavy a cost?

First, it has been proved to demonstration, that local distress cannot be relieved out of national funds without great abuses and evils, tending, by a direct and rapid process, to an entire disorganisation of society. This is, in effect, to expose the common stock to a general scramble. All are interested in getting as much as they can. It is nobody's concern to put a check on the expenditure. If the poor man prefers idling on relief works or being rationed with his wife and children, to hard labour; if the farmer discharges his labourers and makes the state of things a plea for not paying rates or rent; if the landed proprietor joins in the common cry, hoping to obtain some present advantage, and trusting to the chance of escaping future payments, it is not the men, but the system, which is in fault. Ireland is not the only country which would have been thrown off its balance by the attraction of 'public money' *à discrétion.* This false principle eats like a canker into the moral health and

physical prosperity of the people. All classes 'make a poor 'mouth,' as it is expressively called in Ireland. They conceal their advantages, exaggerate their difficulties, and relax their exertions. The cotter does not sow his holding, the proprietor does not employ his poor in improving his estate, because by doing so they would disentitle themselves to their 'share of 'the relief.' The common wealth suffers both by the lavish consumption and the diminished production, and the bees of the hive, however they may redouble their exertions, must soon sink under the accumulated burden. The officers of Government, overborne by numbers, and unable to test the interested representations pressed upon them from all quarters, cannot exercise their usual watchful care over the expenditure of the public money. Those persons who have the will to do their duty, have not the power. Those who have the power, have not the will. There is only one way in which the relief of the destitute ever has been, or ever will be, conducted consistently with the general welfare, and that is by *making it a local charge.* Those who know how to discriminate between the different claims for relief, then become actuated by a powerful motive to use that knowledge aright. They are spending *their own money.* At the same time, those who have the means of employing the people in reproductive works, have the strongest inducement given them to do so. The struggle now is to keep the poor off the rates, and if their labour only replaces the cost of their food, it is cheaper than having to maintain them in perfect idleness.

Another point which has been established by the result of these extensive experiments in the science, if it may be so called, of relieving the destitute, is that two things ought to be carefully separated which are often confounded. Improvement is always a good thing, and relief is occasionally a necessary thing, but the mixture of the two is almost always bad; and when it is attempted on a large scale without proper means of keeping it in check, it is likely to affect in a very injurious manner the ordinary motives and processes by which the business of society is carried on. Relief, taken by itself, offers, if it is properly administered, no motive to misrepresent the condition of the people; and being burdensome to the higher, and distasteful to the lower classes, it is capable of being carefully tested and subjected to effectual control. But when relief is connected with profitable improvements and full wages, the most influential persons in each locality become at once interested in establishing a case in favour of it, and the higher are always ready to join with the lower classes in pressing forward *relief works* on a plea of urgent general distress, which it may be impossible to analyse

and difficult to resist. Relief ought to be confined as much as possible to the infirm and helpless. Wages, by means of which improvements are carried on, should be given by preference to the able-bodied and vigorous. Relief ought to be on the lowest scale necessary for subsistence. Wages should be sufficiently liberal to secure the best exertions of the labourer. Relief should be made so unattractive as to furnish no motive to ask for it, except in the absence of every other means of subsistence. Improvements should be encouraged and urged forward by every practicable means, both as regards the parties undertaking them, and those by whom they are executed. If labour is connected with relief, it should only be as a test of the destitution of the applicant, and of his being consequently entitled to a bare subsistence, in the same way as confinement in a workhouse is also a test; and the true way to make relief conducive to improvement, is to give the rich no choice between maintaining the able-bodied poor in idleness or employing them on full wages on profitable works, and to take care that the poor have no reason to prefer living in idleness on public alms, to the active exercise of their industry.

Among all our discouragements, there are not wanting many and sure grounds of hope for the future. The best sign of all is, that the case of Ireland is at last understood. Irish affairs are no longer a craft and mystery. The abyss has been fathomed. The famine has acted with a force which nothing could resist, and has exposed to view the real state of the country, so that he who runs may read. We have gained, both by what has been unlearned, and by what has been learned during the last two years: and the result is, that the great majority of people, both in Ireland and England, are now agreed upon the course which ought to be pursued, in order to arrive at the wished-for end. The attention of the two countries has also been so long directed to the same subject, that a new reciprocity of interest and feeling has been established, and the public opinion of each has begun to act upon the other with a force which was never felt before.

The Irish have been disabused of one of the strangest delusions which ever paralysed the energies of a naturally intelligent and energetic people. Those who knew the country best were aware of the habitual dependence of the upper classes upon the Government; and it was a common saying of former days, that an Irish gentleman could not even marry his daughter without going to the Castle for assistance. The vulgar idea was, that when difficulties occurred, every personal obligation was discharged by 'bringing the matter under the considera-

'tion of the Government;' and if, in addition to this, 'a hand-'some support' was promised, it seldom meant more than helping to spend any public money that might be forthcoming. But it was reserved for that potent solvent, the Famine, to discover to the full extent, this element of the national character. To pass with safety through this great crisis, required that every man, from the highest nobleman to the meanest peasant, should exert himself to the utmost of his means and ability; instead of which, the entire unassisted burden of employing all the unemployed labourers of Ireland, of improving all the unimproved land of Ireland, and feeding all the destitute persons in Ireland, was heaped upon a Board consisting of five gentlemen sitting in an office in Dublin. The example of the gentry was followed with customary exaggeration by the lower orders, and throughout extensive districts the cultivation of the land was suspended in the spring of 1847 until it should be seen what 'encouragement' the Government would give, or, as it was sometimes ingenuously expressed, 'We expect the 'Government will till the ground.' It is also a fact that the people in some parts of the West of Ireland neglected to a great extent to lay in their usual winter stock of turf in 1847, owing to the prevalence of a popular impression that the Queen would supply them with coals. Ireland has awakened from this dream by the occurrence of the most frightful calamities, and it has at last begun to be understood that the proper business of a Government is to enable private individuals of every rank and profession in life, to carry on their several occupations with freedom and safety, and not itself to undertake the business of the landowner, merchant, money-lender, or any other function of social life. Reason is now able to make herself heard, and there has not been wanting many a warning and encouraging voice from Ireland herself, declaring, 'The prosperity of Ireland is 'only to be attained by your own strong arms. We are able 'to help ourselves. We will no longer be dependent on the 'precarious assistance received from other lands. We will 'never rest until every sod in Ireland brings forth abundantly '— till every inch of ground is in its highest and fullest 'state of bearing. In a short time we shall have among us 'more industry and exertion, less politics and more plough-'ing, less argument and more action, less debating and more 'doing.'*

The uniting power of a common misfortune has also been

* Speech of Mr. Richard Bourke, M.P. for Kildare, to his father's tenantry, September 1847.

felt throughout the British empire. Those who had never before exchanged words or looks of kindness, met to co-operate in this great work of charity, and good men recognised each other's merits under the distinctions by which they had been previously separated. The Protestant and Roman Catholic clergy vied with each other in their exertions for the famishing and fever-stricken people, and in numerous instances their lives became a sacrifice to the discharge of their exhausting, harassing and dangerous duties. To the priests all were indebted for the readiness with which they made their influence over their flocks subservient to the cause of order; and the minister of religion was frequently summoned to the aid of the public officer when all other means of restraining the excited multitude had failed.* The political dissensions which had distracted Ireland for centuries became suddenly allayed. The famine was too strong even for the mighty demagogue, that great mixed character to whom Ireland owes so much good and so much evil. People of every shade of political opinion acted together, not always in an enlightened manner, but always cordially and earnestly, in making the social maladies of Ireland, and the means of healing them, the paramount object. In the hour of her utmost need, Ireland became sensible of an union of feeling and interest with the rest of the empire, which would have moved hearts less susceptible of every generous and grateful emotion than those of her sons and daughters.† Although

* Although both did their best, it is fair to state that the Protestant clergy had some advantages which the Roman Catholic clergy did not possess. The Protestant clergy were assisted by liberal subscriptions from England; and as their stipends are primary charges on the rent, they were regularly paid even during the period of the greatest distress. The Roman Catholic clergy, on the contrary, depend, both for their own subsistence, and for the means of helping their poor and ignorant people, upon the voluntary contributions of the people themselves: and when these had nothing to give, owing to the failure of their crops and the want of employment, the clergy were reduced to great straits, which they bore with exemplary patience. The fees on marriages and baptisms, which are the principal source of the income of the Roman Catholic clergy, almost entirely ceased in some parts of the country.

† 'A great deal has been written, and many an account given, of the dreadful sufferings endured by the poor, but the reality in most cases far exceeded description. Indeed, none can conceive what it was but those who were in it. For my part, I frequently look back on it as a fearful and horrid dream, scarcely knowing how sufficiently to express gratitude to the Almighty for having brought this country through it, even as it is. If the first measures which prepared us to meet the second and severest calamity had been neglected, it is fright-

the public efforts in her behalf were without parallel in ancient and modern history, and the private subscriptions were the largest ever raised for a charitable object, they were less remarkable than the absorbing interest with which her misfortunes were regarded for months together, both in Parliament and in society, to the exclusion of almost every other topic. It will also never be forgotten that these efforts and these sacrifices were made at a time when England was herself suffering under a severe scarcity of food, aggravated by the failure of the cotton crop, and by the pecuniary exhaustion consequent upon the vast expenditure for the construction of railways. Even in such a state of things, though serious injury was done to all her interests by the Irish Loan, and though the pressure upon the labouring classes was greatly increased by the wholesale purchase of their food, that it might be given without cost to the starving Irish, yet every sacrifice was submitted to without a murmur by the great body of the people.

Although the process by which long-established habits are changed, and society is reconstructed on a new basis, must necessarily be slow, there are not wanting signs that we are advancing by sure steps towards the desired end. The cultivation of corn has to a great extent been substituted for that of the potato; the people have become accustomed to a better description of food than the potato*; conacre, and the

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ful to suppose what would have been the state of this afflicted country. My opinion is, that there are but very few who will not gratefully remember the generous and prompt relief afforded in this time of trouble; such sufferings, and such help, cannot be easily forgotten.' — *Captain Mann's Narrative.*

* The Irish peasant made up for the deficiency of nutritive qualities in the potato, by the quantity he ate, amounting generally to as much as fourteen pounds in a single day; and it was therefore a general complaint at first, that the Indian corn left an uneasy sensation, arising from the absence of the habitual distension of the organs of digestion. The half raw state in which it was often eaten, arising partly from ignorance of the proper mode of cooking it, and partly from impatience to satisfy the cravings of hunger, also concurred with the previous debilitated state of the people, to produce sickness when it was first introduced. All this, however, has been got over, and the people have now not only become accustomed to the use of a grain food, but they prefer it, and declare that they feel stronger and more equal to hard work under the influence of a meal of stirabout, than of potatoes; and their improved appearance fully bears out this conclusion. One main cause of the fact which has been so often remarked, that the Irishman works better out of Ireland than in it, is, that when he leaves his native country and obtains regular employment elsewhere, he commences at the same time a more strengthening diet than the potato. It is commonly observed in Canada, that the Irish

excessive competition for land, have ceased to exist; the small holdings, which have become deserted, owing to death, or emigration, or the mere inability of the holders to obtain a subsistence from them in the absence of the potato, have, to a considerable extent, been consolidated with the adjoining farms; and the middlemen, whose occupation depends upon the existence of a numerous small tenantry, have begun to disappear. The large quantity of land left uncultivated in some of the western districts is a painful but decisive proof of the extent to which this change is taking place. The class of offences connected with the holding of land, which was the most difficult to deal with, because agrarian crimes were supported by the sympathy and approbation of the body of the people, and were generally the result of secret illegal associations, fell off in a remarkable degree*; and although offences against

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emigrants, although a much larger race of men than the French Canadians, are, for some time after their arrival, inferior to them as farm labourers; and this difference is attributed to their food. The Canadian labourer, who receives his food as part of his hire, has an ample breakfast on bread and milk. He dines at midday on *soupe aux pois*, with a full quantity of salt pork, and bread *à discrétion*. At four o'clock he is allowed a luncheon of bread and onions, and at night he has a ragout of meat and vegetables for his supper. He however works laboriously, and generally from sunrise to sunset, and is scarcely ever absent a day from his work. An Irishman cannot endure this continuous labour without better food than the potato; and in every way it is desirable to teach him the use of a more substantial diet, both to enable him to give a proper amount of labour for his hire, and in order to raise him to a higher standard as a social being. We shall not consider the object finally accomplished until the people of Ireland live upon a bread and meat diet, like those of the best parts of England and Scotland.

* The following is the proportion of agrarian crimes in each quarter from January 1845, to November 1847:—

In the Quarter ending				
Jan. 31. 1845,	the proportion is one in	-	-	4¼
April 30. 1845,	„ „	-	-	3 1/12
July 31. 1845,	„ „	-	-	4⅖
Oct. 31. 1845,	„ „	-	-	5⅕
Jan. 31. 1846,	„ „	-	-	4
April 30. 1846,	„ „	-	-	3⅕
In the Quarter ending				
July 31. 1846,	the proportion is one in	-	-	8
Oct. 31. 1846,	„ „	-	-	19
Jan. 31. 1847,	„ „	-	-	54
April 30. 1847,	„ „	-	-	64
July 31. 1847,	„ „	-	-	42
Oct. 31. 1847,	„ „	-	-	12.

other kinds of property increased, owing to the general distress, the usual difficulty was not experienced in obtaining convictions. The much-desired change in the ownership of land appears also to have commenced; and when great estates are brought to the hammer now, instead of being sold, as formerly, *en masse*, they are broken up into lots*, which opens the door to a middle class, more likely to become resident and improving proprietors than their predecessors, and better able to maintain the stability of property and of our political institutions, because they are themselves sprung from the people. The most wholesome symptom of all, however, is that a general impression prevails, that the plan of depending on external assistance has been tried to the utmost and has failed; that people have grown worse under it instead of better; and that the experiment ought now to be made of what independent exertion will do. This feeling has been much strengthened by the necessity which has been imposed upon the upper classes through the Poor Law, of caring for the condition of the people; and the attention of the country gentlemen has in many districts been seriously directed to the means of supporting them in a manner which will be alike beneficial to the employer and the employed.

The poet Spenser commences his view of the state of Ireland by these discouraging observations: — 'Marry, so there have 'been divers good plots devised, and wise counsels cast already 'about reformation of that realm, but they say it is the fatal des-'tiny of that land, that no purposes whatsoever which are meant 'for her good will prosper or take good effect; which, whether it 'proceed from the very genius of the soil, or influence of the 'stars, or that Almighty God hath not yet appointed the time of 'her reformation, or that he reserveth her in this inquiet state

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The increase of agrarian crimes which has lately taken place, is more connected with resistance to the payment of rents, than with opposition to ejectments from the possession of land; and it has been almost entirely confined to the counties of Tipperary, Clare, Limerick, and Roscommon. Out of 195 crimes committed in the whole of Ireland in October 1847, 139 were committed in Clare, Limerick, and Tipperary; being 71 per cent. of the whole number, although the population of these three counties is only 13 per cent. of the population of Ireland. The districts in the north-west and south-west of Ireland, which suffered most from the failure of the potato-crop in 1845-6, were at the same time remarkable for the absence of atrocious crimes.

* The manner in which the Clanmorris and Blessington properties, and a portion of that belonging to the Cunningham family, have been disposed of, are instances in point.

'still for some secret scourge, which shall by her come into 'England, it is hard to be known, but yet much to be feared.' Our humble but sincere conviction is, that the appointed time of Ireland's regeneration is at last come. For several centuries we were in a state of open warfare with the native Irish, who were treated as foreign enemies, and were not admitted to the privileges and civilising influences of English law, even when they most desired it. To this succeeded a long period of mixed religious and civil persecution, when the Irish were treated as the professors of a hostile faith, and had inflicted on them irritating and degrading penalties, of which exclusion from Parliament and from civil and military office was one of the least; the general characteristics of this epoch of Irish management being, that the Protestant minority were governed by corruption, and the Roman Catholic majority by intimidation. During all this time England reaped as she sowed: and as she kept the people in a chronic state of exasperation against herself, none of her 'good 'plots and wise counsels' for their benefit succeeded; for there was no want of good intention, and the fault was principally in the mistaken opinions of the age, which led to persecution in other countries besides Ireland. Now, thank God, we are in a different position; and although many waves of disturbance must pass over us before that troubled sea can entirely subside, and time must be allowed for morbid habits to give place to a more healthy action, England and Ireland are, with one great exception, subject to equal laws: and, so far as the maladies of Ireland are traceable to political causes, nearly every practicable remedy has been applied. The deep and inveterate root of social evil remained, and this has been laid bare by a direct stroke of an all-wise and all-merciful Providence, as if this part of the case were beyond the unassisted power of man. Innumerable had been the specifics which the wit of man had devised; but even the idea of the sharp but effectual remedy by which the cure is likely to be effected, had never occurred to any one. God grant that the generation to which this great opportunity has been offered may rightly perform its part, and that we may not relax our efforts until Ireland fully participates in the social health and physical prosperity of Great Britain, which will be the true consummation of their union.

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